OTTO KOCHTITZKY

THE STORY OF A BUSY LIFE

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FOREWORD

It is our thought and hope in the preservation of this account of "An Active Life" that it will be read with interest and pride by posterity. It is the story of the development of a section of this country from almost the depths of wilderness to a thriving and rich agricultural district where good living abounds, and an accurate account of some of the men most active and interested in the project.

We hope that those who read it will realize what costs of effort and struggle are in the foundation of the rich reward to be had now from these alluvial lands, and the standards and vision of these men may well be exemplary for many generations.

"Think not that the nobilitie of your ancestors doth free you to do all that you list. Contrarywise it bindeth you more to followe virtue".

(Pierre Erondell)

Columbus, Mississippi
January 13, 1957

Otto Kochtitzky, Jr.

AUTHOR'S FOREWORD

At seventy-six years I have reviewed in these memoirs the several subjects which have greatly interested me. The story is briefly told, leaving out much of interest which would have embellished the crudely expressed account. The telling is as nearly correct as possible depending on memory only.

My life in my modest home until the age of twenty was uneventful. Without special education or training I drifted into the land reclamation. We do not plan our lives and few of us live them in an assertive way. Perhaps my strongest talent was mechanics, but I was never content to stop with building the machine itself. I was only satisfied with or interested in the results obtained by the use of machines. I must have part in the things accomplished. I could not rest with satisfaction in the day's work done but must contemplate the work ahead. I did not aspire to finish but rather to continue to build and extend and adapt. The changing, evolving spirit of our time, especially the development of a new order of life in New America, was in accord with my spirit. Perhaps the environment formed the spirit.

I have been an influential factor in a great enterprise. I have enjoyed my busy life.

Cape Girardeau, Missouri
1931

Otto Kochtitzky

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ILLUSTRATIONS AND MAPS

chapter one

BOYHOOD

My father, Oscar von Kochtitzky, was a younger son in an old Silesian or Polish aristocratic family of some political influence. His branch of the family became established in Hungary about A.D.1800. He was educated for military service and at the age of eighteen was an aide to one of the generals in the struggle for independence of that country in the general uprising of 1848. The effort failed. His father and all his brothers were killed in the war and himself wounded to such an extent that he was left on the field of battle as dead. He recovered, escaped to Turkey, and eventually reached New York City about the year 1850. I do not know his experiences during the next four years. He did not follow the example of other educated Hungarian exiles but seems to have led a life of adventure, applying himself for service in anything that offered. He traveled westward. He chopped chestnut cordwood in Pennsylvania, and carried a wound in his foot because of awkward use of the axe. He tried to join the ill-fated Walker Expedition to Nicaragua and pro-

ceeded by boat as far as Wellsville, Ohio, where he was accidentally left by the boat when he went ashore for a lunch.

He finally appeared in northeast Ohio about 1854 and was employed as operator on a water power sawmill in the creek valley adjoining my maternal grandfather's farm in Stark County. The footway crossing over this creek was used by my mother who taught in the district school on the ridge beyond the creek. By this circumstance they became acquainted and a courtship of much energy and passion on the part of the Hungarian, adrift in the new world, resulted in marriage. He had been working at wages of less than one dollar per day and, of course, had no capital and no resources, but this does not seem to have been an impediment to the marriage.

The young couple, without any sufficient reason, decided to go west and lived for a short time in northern Indiana. While living there, Carl Rinehart, a friend of my father's in Europe, came over and stayed with them. During that time Rinehart had a letter from an uncle in Germany stating that he owed Oscar von Kochtitzky's father $500.00 for cattle, of which debt my father knew nothing. He sent Rinehart the money to deliver, saying he could not send it direct to my father as the authorities would attach it. This incident is significant as indicating the high respect for obligation existing between those families.

They returned to Ohio and lived as tenants

on a farm near my grandfather until about the year 1858, when they proceeded to a one hundred acre tract of high prairie land in the eastern part of Illinois, purchased and presented to them by my grandfather. On this one hundred acres a farmhouse had been built and my father farmed as much of the land as he could work without hired help. In 1862 the market for his surplus corn was destroyed by the closing of navigation on the Mississippi River, due to the Civil War. His market for corn was at Danville, Illinois, fourteen miles east of his farm, to which he hauled a four-horse wagon load, which he exchanged for one newspaper and a pair of shoes for my four-year old brother. The remainder of his corn crop was stored in cribs on the farm and as nearly as we know was later consumed by his neighbor's cattle.

He decided to take the family back to Ohio and enter the army on the Union side. I do not know his sentiment but I think his military training and his belief that he could rise in the service, together with his sympathy with the cause and his desire to support the government under which he found himself, were the impelling influences in making this decision.

My mother and the four children were housed in my grandfather's home and my father entered the 115th Ohio Volunteer Infantry in the latter part of the year 1862, stationed in barracks at Cincinnati. He was elected Second Lieutenant of Company "I" and saw no service until his regiment was transferred to central

Tennessee. They remained in that section on patrol duty until Sherman completed his campaign through Georgia to the coast, when my father realized that the chance for active service and promotion would not occur to him and resigned and came home.

He brought home an old doublebarrelled shotgun as a trophy of war. It was loaded with slugs of lead and he said it failed to fire when he encountered the owner among the cedar thickets.

My grandfather, John Shidler (formerly spelled Scheidler) had settled on a quarter section of land in the eastern part of Stark County, Ohio, sixty miles south of Cleveland, about 1830. In 1860 he cleared the last six acres of one hundred and three acres then in cultivation. He had an orchard of about five acres in cherries, pears, peaches, and apples. There was a little coal deposit on one corner of the farm from which he procured part of his fuel supply. He had reserved fifty acres in timber, containing an excellent sugar orchard, from which he obtained about all the sugar and syrup used by the family. He kept one hundred head of sheep and a few cows. He used four horses to operate his farm. His first dwelling house was built of lumber with a large stone chimney, which was equipped with kettles and Dutch Ovens and used for cooking before cooking stoves came into general use. When we came to live on the farm the old oil lamps were still hanging in place in this

house. The large copper kettle swinging on the chimney crane was used for making preserves and especially for apple butter, which was made of sour apples boiled in sweet cider until cooked to a perfect preserve. I spent many an hour stirring the slow-cooking apple butter. This house was used for storage and for a washroom and the discarded loom still stood in one corner.

About 1850 he built a good two-story house of bricks made by himself on the farm. This new house was well built and very well planned. It had a large cellar for storing apples and potatoes. He built a fireplace for the family sitting room in which he used wood fuel. There was a spinning room about twelve feet wide and thirty feet long on the second floor. A large brick oven and smokehouse were built in the back yard. We heated the oven with discarded rails and other dry wood and baked light bread and pies once each week during all of the time I lived in this home. We hung our meat to cure in the smokehouse and used only hickory wood for smoking it. The farm produced an abundance of milk and butter, chickens and eggs, and meat. He sold wheat, clover seed, flax, apples, wool, and pork as his money crops.

My father rented this farm for about three years. During his farming we bought one of the first mowers, then just coming into use. It was a heavy machine balanced on a single drive wheel and we used four horses to it. This machine was set aside later for a two wheel mower and reaper combined, which was much lighter

and could be pulled by two horses. The reaper had a platform for receiving and dropping the bundles of wheat and was called a dropper machine. The first sewing machine in our home, the Little Giant, weighed about six pounds, was turned by hand, and made a chain stitch which raveled easily. Coal-oil lamps came into use about this time. We were exceedingly cautious, as kerosene was considered dangerous. We generally used candles molded at home from tallow of our own production.

Farm life was drab and dour for the restless ex-soldier and under influence of some real estate literature he decided to move to the Ozark country. In September 1867 he loaded some household effects and the family into two farm wagons and started. We drove directly west, through the "black swamp" of Ohio and Indiana, avoiding the toll roads. We camped out, except in very bad weather, and made the trip to the old town of Lebanon, Missouri, in about thirty days. We ferried across the Mississippi River at St. Louis, camped one night in the suburbs and one night near Arlington by the beautiful clear Piney River, which has its source in one of the very large springs characteristic of the disturbed broken Ozark "uplift."

The old stage and mail road from St. Louis to the Southwest did not follow the crooked creeks which meander among rugged, rocky hills in a general northeast direction toward the Gasconade or Osage Rivers, but held to a more direct course toward the southwest corner of

the state. It was up hill and down, with more clay and less gravel on the upland, and less clay and more gravel in the creek valleys. The uplands and hillsides were covered with a sparse growth of hardwoods, mostly post oak, which was more luxuriant in the valleys, with elm, ash, maple, walnut, and other varieties of oak; hazel bushes were everywhere, and wild grapes and strawberries.

The pioneer settlers were mostly immigrants from the older states of North Carolina, Tennessee, and Kentucky. They had cleared small farms in the creek valleys and the most fertile portions of the uplands, producing sufficient corn, wheat, potatoes, hay, and vegetables for their own needs. The open range afforded pasture for cattle, horses, and hogs which, with a little tobacco and fur, were marketed in St. Louis, where supplies of groceries and manufactured goods, carried in the little stores, were obtained. The people lived an easy and contented social life with little ambition to progress. The schools were very poorly supported.

Old Lebanon was a cheaply built pioneer town situated at the east edge of the first prairie we reached in Missouri. The road from St. Louis to the "Southwest" passed along the south side of Courthouse Square, from the corners of which streets extended on lines parallel to its four sides. The principal business houses fronted the "square" on the main road. The courthouse had been destroyed by fire. The "Academy" was an old, two-story frame building with

two poorly furnished rooms on each floor. It had been painted white about the year 1856.

We stopped at the old home in Illinois, but father decided to proceed farther. The land in Laclede County, Missouri, was not nearly so good for farming as the one hundred acres in Illinois, and I have never known a reason for continuing so far west except, perhaps, that he was a Democrat and had ambition and some hope of opportunity for political advancement. Illinois, being a Republican state, did not offer him the field of action he needed, and eventually found in Missouri.

He opened a small grocery store in Lebanon where we lived one year. I was occasionally sent with a team to Bennett's Mill for flour and meal. The water power to operate this old mill was developed from the flow of a large spring in a mountain cove now embraced in a state park. The water boiled up through a hole in the rock, about twenty feet in diameter forming a creek about fifty feet wide, two feet deep, and flowing with a fairly swift current. I presume it flowed about two hundred fifty cubic feet per second. The water was free from mineral flavor, sweet and very clear. I waded out on the flat rock to the edge of the spring and saw fish in it at a depth I could not reach with my fishing line.

The mill had one set of "burrs" for crushing or grinding wheat into flour and another set for corn. These burrs were two flat stones ac-

curately chiseled into circular disks about one foot thick and four or five feet in diameter, with carefully cut surfaces, and set one above the other in a strong solid frame. The upper stone was stationery and could be raised or lowered a little to adjust it to the lower one, which turned, to grind to a fineness to suit the customer. The grain poured in from a hopper through a hole at the center of the upper stone and the flour or meal gradually worked out to the edge through slight grooves in the burrs.

During that summer I frequently tethered the horses on the prairie about a mile west of town for grazing on prairie grass while I read yellow-back novels. The present little city of Lebanon was located on this prairie when the "Frisco" Railroad was extended a few years later.

There were many wild turkeys in the Ozark country. They have the habit of ranging over the same section every day during each season. We trapped them in small rail pens which were covered with brush and had a narrow trench for the birds to enter under the bottom rail. Washington's suggestion of the turkey for our national emblem was rejected but, at that, might have been fairly appropriate. A replica of this simple trap with its beguiling bait of golden grain to lead the simple bird within, and the foolish gobbler, rampant, might well serve as an emblem for our high tariff party.

We had lived in Lebanon about one year

when my father traded his grocery store for a sixty acre farm on Cobb Creek. The creek bottoms were better soil and, the stock water being more convenient, were more generally sought for farms. While the upland is not a deep soil it produces a fair growth of bluegrass or clover. During the four years on the farm we lived almost entirely on what the farm produced. We sold a little wheat and some fresh pork, altogether not over $300.00 per year.

My school opportunities were only such as were afforded by the country schools, which were poorly maintained and poorly equipped, during our residence on Cobb Creek. The teachers were paid about $25.00 per month and because of the low salaries we were frequently without a teacher for part of the proper school period. My father was interested in providing all possible opportunities for his children and taught our Cobb Creek School one month when we were unable to secure a regular teacher.

The schoolhouse stood on a hillside about one-half mile from our home, surrounded by oak timber and hazel undergrowth. It was about twenty feet square, built of logs with a large stone chimney which had a fireplace large enough to admit a backlog four feet long and a foot in diameter. The puncheon floor was split oak logs hewed to straight surfaces and edged to fit together. There were no desks except a table or shelf near the fireplace under one low window where the teacher presided. Our school district was enlarged while we lived on the creek

and a new, one-story frame and weatherboarded schoolhouse was built, never painted, about one-half mile farther from our home. This building was not more comfortable but it had a stove and had a proper teacher's desk and fairly comfortable seats with desks for the pupils. I taught one short term here when I was sixteen years old and still have the following unpaid order:

Oakland, Mo. Sept. 1, 1874
Due Otto L. Kochtitzky the sum of one hundred and thirteen Dollars and twenty-eight cents for service as Teacher in Sub. Dist. No. 1 Tp.34. 14W.

O. von Kochtitzky
Clerk Tp.34.R.14W

I also taught three months in a nearby district on Osage Fork of Gasconade River. Mr. Honsinger, with whom I boarded had a better farm than ours. He lived in a fairly comfortable but never painted house and was certainly well satisfied with his surroundings. His principal income was from stock raising on the open range of the Ozark Hills. He had planted peach trees in the corners of his rail fences and had an abundant crop of fine peaches that summer. It seems that the trees were not subject to disease and the fruit was perfect. He had no market for peaches, but took two wagon loads to the distillery and brought home a small barrel of most excellent brandy. I did not get many invitations to partake of the brandy, but it was fine and I am sure would sell today for whatever the

old Dutchman might ask.

In the general election of 1870 my father became a candidate on the Democratic ticket for Representative of Laclede County.

He was forty years old. He had the carriage and address of the soldier, was direct in his manner and conversation, and a little of the foreigner. He had always been a leader. He spent about two months on horseback visiting every part of the county and making a personal canvass of the voters.

On one occasion he entered a Republican meeting, corrected some misstatement which had been made regarding himself, finished what he wished to say without interruption, and retired. His audience contained many ex-soldiers from both sides in the Civil War and others who had experienced the ills of guerilla depredations on this borderline. He won. At the capitol he assumed leadership of the South Missouri delegation and was recognized as a political influence in that portion of the state.

He worked earnestly and efficiently in bringing about the enfranchisement of the Confederate sympathizers and was of some influence in the B. Gratz Brown administration. The Grand Duke Alexis of Russia visited this country in 1871 and was invited to attend a session of the Missouri Legislature. A member of his staff noticed the name von Kochtitzky on hearing the roll call on some motion or bill before the House of Representatives. He called the Grand Duke's attention

to the name as being that of a well known family in Europe. The Grand Duke expressed to Governor Brown the wish to meet my father. The Governor came to my father's seat in the House of Representatives and told him of the Grand Duke's request.

Father rose, replying, "With all deference to you, I am unwilling to meet a member of the ruling family of the nation which lent its strength and influence to suppress the effort for liberty in my country."

He became a candidate for the office of registrar of lands, an office of little importance but which carried a salary which he needed to provide for his family. He failed to get the nomination but secured Chief Clerkship. His work in the land office gave him information regarding the swamplands of the state and was the direct lead to his later enterprise in Southeast Missouri.

We moved to Jefferson City in 1872 when I was seventeen years old. I had lived on farms except the one year in the old town of Lebanon. I was an uncouth, clumsy country boy. I leaned forward and walked rapidly in a shambling gait. I was intent in everything and absent-minded. I remember I wore a gray, loose-fitting rough woolen "store" suit for which I had traded a fat, dressed hog to the Jew merchant in Lebanon. The old sow weighed about four hundred pounds. We had butchered the day before in the beginning of a northwest blizzard. I drove the ten

miles to town in cold so severe that I walked the greater portion of the distance to keep warm and delivered the hog in frozen condition.

In the high school I was first in my class in mathematics, physics, and geography but certainly not first in English and literature. My father had secured for me the position of messenger in the House of Representatives for that session and I skipped service while I attended school each forenoon. I always reported for each afternoon, sometimes working late at night. I was later drafted in the enrolling clerk's office and worked there during the last few days of the session. I became acquainted with some of the leaders of that period. Among them was Joseph Pulitzer, afterwards editor of the New York World, then a representative from the city of St. Louis. I knew Governor Woodson and Governor Hardin.

The city high school was conducted in a fairly good brick building in the next block to my home and was under the supervision of Professor Lampkin. We in the higher grades had a pleasant and easy course under Mr. Lampkin who seemed to be disposed to take life leisurely. I do not recall any strenuous work for this boy from the Ozarks except the course in German under a German professor. I still think that German professors are very irritable. My brother was in a lower grade and his difficulty was in learning to spell. Spelling was recited by writing the words on the blackboard thus exposing to the whole class whatever mistake

might be made. My brother was very sensitive and this method, which is still followed in many schools, was so distressing to him that he begged to be permitted to quit school. My father arranged for him to attend a private school in the home town of one of his political friends and my brother never again returned to this school.

When I quit high school at eighteen I was readily able to solve this problem, given to a graduation class in an Ohio college and submitted to me by an uncle:

> "The area inclosed by three equal circles touching externally is one acre; what is the diameter of each circle?"

Geometric demonstration of the algebraic binomial formula for square root was easy as A. B. C.

We were living on Madison Street near the edge of Goose Bottom in Jefferson City. Fanny Thompson's home was in the next block toward the center of town. Fanny was in high school, her desk was next to mine and we were very friendly. I would sometimes spend part of the evening after school with her. Once when I was starting home without my hat she called, "Oh Mr. Kochtitzky, won't you take your hat?" I returned and took my hat from Fanny. She was secretary of the Baptist Sunday School which I attended, mostly on her account. She finished school and married the Sunday School Superintendent and I presume they were happy ever after.

There was no religious atmosphere in my home life, although my father was very strict regarding some matters which he considered proper and necessary training for his boys. We knew that when he married he promised to quit drinking and that he had "kept the faith." We were taught to be truthful and reliable, and to respect the rights of others as well as to promote the welfare and happiness of our associates as much as we might. I had attended the religious meetings in our vicinity on Cobb Creek and frequently heard earnest sermons by those backwoods preachers. At Jefferson City I attended the Baptist or Presbyterian Church and had at this time serious thoughts on religion. After hearing some sermons at a Baptist revival I deliberately gave attention to the subject of church and church obligation. I dealt with it as I would with any ordinary subject of interest and arrived at the conclusion that for me there was no religious impulse, that my life must be wholly and only guided by my relations with others, and beyond that I was unable to add to or take away from whatever the future might be. This was deliberately, quietly, and resolutely thought out by myself and has not been modified. That decision was made after listening to able and enthusiastic preachers who had very little influence except where they touched the last five commandments of the Decalog; the first five were omitted in my life. Yes, Jesus, the "Son of David," the embodiment of Jewish racial idealism, so loved his fellow man that he gave his life that others might be inspired to follow him.

My mind could not set aside the evidence of facts to accept the ipse dixit of theology. That God the Father created the world for man was too plainly a theological hypothesis. Reason teaches that the ox lives because grass grows and does not affirm that grass was created specially that the ox should live. To my mind, "faith is the substance of things hoped for, the (only) evidence of things unseen."

About ten of my young men friends organized the Periclean Club for mutual aid in our studies and for social intercourse. About half of the club were studying law. We were normal boys trying our experiments and entertaining ourselves as the impulse moved us. Someone suggested that we could easily lift, on our finger ends, the weight of a man by simply blowing our breath over the body to create movement of air. We tried this experiment and found that it can be done. Someone suggested that as we were in need of club funds we should put on a public entertainment. We decided to engage Eli Perkins, a professional humorist, for a lecture. We billed the town and advertised in the paper. The public was not interested. Mr. Perkins began his address by remarking that his experience and observation confirmed the Biblical statement that the "wise men came from the East." We "Westerners" supplied the deficit to make up Mr. Perkins' fee.

Of the Periclean Club, Warren Watson became the close associate and secretary of Judge Krekel, then living at Jefferson City but after-

ward transferred to Kansas City, as Judge of the United States Circuit Court of Missouri. J. C. Fisher, who grew up in the City Hotel as bellboy and clerk, became an active and efficient lawyer and was accredited with successfully organizing the construction of the bridge across the Missouri River at Jefferson City. Louis Krauthoff, whose father was a German saloonkeeper, and whose early life was largely on the street, developed talent and address as a lawyer, which enabled him to rise rapidly in a remunerative practice, first in Jefferson City, where he married the daughter of the State Treasurer, then in Kansas City, and later in New York City. The other members of the club did not make careers of note.

In February 1875 my father sent my brother and me to New Madrid, Missouri, to take charge of some land surveys under his direction. There were areas in Southeast Missouri which had been reported by the surveyors as "inaccessible swamp." The Department of the Interior had established a rule requiring that surveys of these swamps should be made without cost to the United States government.

The act of Congress, approved September 28, 1850, entitled "An Act to Enable the State of Arkansas, and other states, to Reclaim the Swamp Lands within their Limits," granted all the "swamp and overflowed lands, made unfit thereby for cultivation, within the state of Missouri, to said State, in fee simple subject to the disposal of the Legislature thereof." Formal pat-

ent, issued January 3, 1886, was signed by President Andrew Johnson.

The Act of the General Assembly of the State of Missouri, approved February 23, 1853, donated the swamplands to the several counties in which they lay. Thus did Congress deal with the problem of reclamation of these swamplands and wisely "pass the buck" to the states; Missouri passed it on to the counties.

My father had contracts with the several counties wherein he agreed to accept land in compensation. This necessarily interested us in the problem of reclaiming the swamplands, which became the absorbing work in my life.

We left Jefferson City on the night of February 22, arrived at St. Louis the next morning, and proceeded to New Madrid by boat.

The first traffic and railroad bridge across the Mississippi River at St. Louis, built by James B. Eads in 1871, was the feature of St. Louis which appealed to me as most interesting. The bridge is unique. It is supported on arches composed of flanged steel cylinders set end to end. There are two sets of four arches each supporting the spans, which are five hundred feet long. The arch plan lent strength and beauty to the structure. The engineering is good and that bridge stands today seemingly as perfect as the day it was built.

Mr. Eads also planned and proposed to Congress a system of levees or jetties for

deepening the Mississippi River channel across the mud bar at the confluence with the Gulf of Mexico. His plan was criticized by the United States Army engineers and he was unable to prevail on Congress to undertake the work. He had acquired a fortune and was able to associate capital to support him in a proposition to build the dikes for an agreed compensation (several million dollars) upon condition that such construction would cause the river to scour out and maintain a channel to the depth of about twenty-eight feet below mean gulf level. This proposition was accepted by Congress and the work duly constructed. It remains a monument to the engineer who backed his conclusions with his entire fortune.

AN EARLY STEAMER PASSING EAD'S BRIDGE

chapter two

THE MISSISSIPPI RIVER

"Nor must Uncle Sam's web-feet be forgotten ... Not only on the deep sea, the broad bay and the rapid river, but also up the narrow, muddy bayou, and wherever the ground was a little damp, they have been and made their tracks."----ABRAHAM LINCOLN

We were taught in school that the Mississippi River has its source in Lake Itaska and flows south to the Gulf of Mexico and, with the Missouri, is the longest river in the United States. The lesson continued with similar descriptions of other rivers. I learned later that the source of the Mississippi River is a chain of very small shallow lakes, or depressions, in the lake region of Minnesota, formed during the melting of the great ice cap of the northern portion of the continent, and that it flows in a canyon eroded by the floods which resulted from the melting of the ice. This canyon increases in width as it extends southward.

The distance between the irregular lines of limestone bluffs, which form its margin, varies

from about one mile at the narrow places to perhaps twenty miles at the widest. Below Cairo it spreads into a valley as much as sixty miles wide, its west margin following the foothills of the Ozarks. There are other canyons leading from the ice field of the lake region, to the greater canyon, which are now occupied by the Wabash, Big Muddy, Illinois, and other rivers draining the area of flat land lying around the southern edge of the Great Lakes.

The Missouri River rises in the mountain region of the Dakotas (sic), flows across the upper great plains, receives the waters of other streams rising in the mountain district, meanders across the plains and turns eastward in its canyon around the northern end of the Ozark uplift, to join the Mississippi River near St. Louis.

The Mississippi canyon was eroded to a great depth and later filled by floods carrying sand and lighter sediment; thus was formed what we now recognize as the river bottom. There was a period in the progress of filling the canyon when the Ohio River flowed along the eastern edge, and the flood of the Mississippi flowed along the western part of the valley. It is difficult to follow the sequence of the changes during this geologic period, but it seems evident that the Missouri River sediment lies on the present surface and is not found in the substrata, which would indicate that the Missouri River had little part in filling the lower Mississippi canyon. The Ohio River sediment is more distinctly a clay and is deposited irregularly

along the eastern edge of the valley. The marks of a distinct river channel below Cairo are confined to the eastern edge of the valley.

These rivers are subject to flood stages, during which they overflow their banks and deposit sediment carried in their flood waters along and near the shore, thus upbuilding the land near the stream and creating a low ridge in which the river flows. This is characteristic of all streams which overflow their banks, and must be reckoned with in every effort to control floods.

The moving sand and sediment create the one great problem in the improvement of the Mississippi River below the junction of the Missouri. The river channel is a series of great loops or bends. The direction of the momentum of the flowing water concentrates the current against the exterior of each bend and erodes the bank and bed. The river flows out of the bend with a reduced velocity and therefore drops its excess load of sand and sediment forming a shoal.

At the exterior of the bends the channel is generally about seventy feet deep; the floor of the river bed gradually rises until at one thousand feet from shore the depth of the channel is about fifty feet and it continues to shoal to probably thirty feet at the opposite shore. On the shoal sections it has a fairly uniform depth of about forty feet.

In a cross section profile of the bed of the river, drawn to a scale of one inch to five hun-

dred feet, the total width would be ten inches and the greatest depth one-seventh of one inch, which will give you a most astonishing picture of the channel and will suggest that engineering construction may modify it but the ever-moving sand and sediment will always present the problem created by an increase or decrease of velocity.

I have selected the following extracts from a very carefully prepared paper by Mr. Robert S. Taylor when a member of the Mississippi River Commission, reviewing the study of the river by engineers, and describing the movement of sediment and reforming of channel by the never ceasing action of its current:

"If the channel of the Mississippi could be emptied of its water, so as to expose it to the bottom, dry and bare, the appearance would be surprising to most of us. Instead of a comparatively level bed corresponding in a general way to the surface of the river and its adjacent banks, there would be found a succession of great sand ridges and intervening crescent-shaped depressions. Passing through one of these depressions the observer would find himself, it might be, a hundred feet or more below the top of the bank on the concave side. Within a few thousand feet he would encounter a sand ridge stretching across the channel perhaps seventy-five feet high. Having crossed the top of this,he would descend into another basin,then climb another ridge, and so on. When the channel is filled with water the crests of these ele-

vations approach the surface and constitute the bars which obstruct navigation.

"The action by which the bars are produced is somewhat as follows: At flood stage a volume of water several times as great as that which goes over Niagara Falls descends 322 feet in flowing from Cairo to the Gulf. Its path is a series of alternately reversed bends. In these bends the current hugs the concave bank, flowing with high velocity and scouring out of the bottom of the channel and from the face of the bank a greater or less, and sometimes a very large, quantity of sand and loam. At the foot of each bend the main flow crosses to the other side of the river and follows the concave bank on that side; and so back and forth, from bend to bend. The place in the channel where the flow thus crossed from the concave face of one bend to the concave face of the next bend below is called, in the vernacular of the river, a crossing."

"As the water passes over the crossing the velocity of its flow falls off a little, to be renewed in the bend below. This slackening need be very little to cause the flowing water to let fall part of the load of sand and loam which it took up in the bend above, . . . and thus are built up the bars between the bends. The current does not take up a full load in each bend and drop it on the crossing. It carries a large load all the time, adding something to it in every bend, and discharging some of it on every bar. A recession of a bank line one thousand feet long with an average depth of seventy-five feet

from the edge of the bank to the bottom of the pool for an average distance of fifty feet in a season would be nothing extraordinary. That would mean the picking up and carrying away of 3,750,000 cubic feet of earth from one bend in one season.

". . . Observations have shown that the earthy matter carried by the river is equal in bulk to one part in 2,900 of water, and in weight to about one part in 1,500 of the total average volume flowing. At an active rising stage the sediment carried past a given point is equal to 1,000 tons a minute. If, at such a point, a screen could be placed across the river, that would filter the water perfectly without checking its flow, there would be enough earth accumulated to make a wall across the channel a foot thick in eight minutes.

"It is a common impression that the sediment which loads the water of the lower Misisssippi comes chiefly from the Missouri River. But it is certain that only a small fraction of it is from that source. Altogether the greater part of it--nearly all of it--is way freight, taken on and unloaded at short intervals. It follows that activity of bar building in the Mississippi depends mainly on activity of bank caving, and that the most effective way to improve the channel is to protect the banks against caving. . . .

"It sometimes happens that, as a bend slowly eats its way into the bank it is followed by a point extending from the other side of the river

which grows by accretion as the opposite, concave bank recedes by erosion. In such a case the bend sometimes tends to develop a circle returning upon itself at the lower side of the point, which results in a large bend with a narrow neck, which, growing narrower and narrower by continued erosion, finally gives way. Such an act of suicide on the part of the river is called a 'cut-off.'

"One would naturally suppose that such a shortening of the river by cutting out a bend would be a fortunate incident. In fact the President of the United States said to the first President of the Mississippi River Commission, whom he had just appointed, and who came to express his sense of the honor conferred, that he thought the first work of the Commission ought to be to 'take some of the kinks out of the river.'

"But a little reflection will show the fallacy of that idea. The stability of the channel of the Mississippi depends on an adjustment between the scouring power of its current and the resisting power of its banks. If the current were more rapid than it is and the banks as they are, there would be more caving, and the river would lengthen. Or if the banks were firmer than they are and the current the same, there would be less caving. The river is a wise engineer. It has made itself a zigzag path down the valley for the same reason that men make zigzag roads down hill--to ease the descent. A cut-off across a neck a thousand feet wide introduces

a fall in the river at that point equal to the whole fall around the bend, which may be as much as four or five feet. Such a change increases the velocity of the current both above and below the location of the cut-off. Within the distance thus affected, which may be fifty miles or more, the river digs into its banks with augmented ferocity, and rests not until it has regained its lost length and restored the former relation between the resisting power of its banks and the scouring power of its current. If the shortening effect of all the cut-offs that have occurred within a century had not been compensated by caving, the length of the river between St. Louis and New Orleans would have been lessened by more than a hundred miles. But careful comparison of present surveys and old maps and records indicates that there has been no substantial change in the length of the river since the occupation of the valley by white men. Since the creation of the Mississippi River Commission it has been part of its business to watch the river's behavior in this respect and prevent cut-offs by protecting caving banks which threaten to produce them." (Thus maintaining the present fall which assures no change in velocity).

Shallow outflow channels or bayous are frequently formed, which extend toward the lower land remote from the river. These bayous overflow their banks, causing some slight upbuild and are known as "high bank" bayous, in distinction from the bayous which develop as drains for the basins filled by accumulated

water of the overflows. The outflow bayous deposit sand or sediment bars where they debouch upon the lowland beyond the river upbuild, and by creating a slight dam and reducing velocity they backfill their channels, thus precluding the possibility of the river's escaping through its upbuilt banks. The river channel below Cairo is generally a little less than a mile wide but at shoals, where the velocity is reduced, it is frequently twice that width. Where erosion occurs on one side there develops a fill in the slack current along the opposite shore maintaining the regimen of width; thus the river channel actually changes little, and very, very slowly.

General Jadwin, in an article published in Nation's Business, December 1929 says: "Although the confinement of the river between levees has brought about large increases in flood heights, it has not caused as yet any cumulative changes in the elevation of the river bed itself.

"The practical way to provide for flood control of the Mississippi River is to cause excessive floods to continue to spill out of the main channel when stages reach the danger point. Then this water will flow to the gulf through the natural drainage basins.

"From the earliest times protection has been obtained in varying degrees by levees. The inhabitants first obtained local protection by throwing up earthern mounds around their individual plantations.

"Then there were combinations of owners and communities that protected large areas by levees.

"Levee districts were formed and chartered in each state until there were about twenty-seven of these districts in the alluvial valley proper, in addition to those north of the valley.

CAN THE RIVER BE HARNESSED?

"During the thirty years that the federal government has been actively engaged in Mississippi River work, many theories have been advanced for the river's improvement. Nearly all of these have aimed at using the force of the water to accomplish the desired results. In certain ways this is possible, and to some extent it is practicable and has produced some desired results.

"However, never have these results been as great as expected, nor have the theories been proved conclusively.

"The theory which has had the most advocates, and which has been actually tried to the greatest extent, is that of 'levees only.'

"This theory is that an alluvial stream tends to make a channel to accommodate itself, and that its confinement by levees would cause flood waters to scour out a channel large enough to accommodate flood waters.

"The confinement of the Mississippi by levees has substantially raised its flood heights. Even if the 'levees only' theory be correct, it

does not solve the problem, because the floods must be controlled before enough time has elapsed for such a theory to work out. The water must be provided for now, and after extreme stages are provided for, a possible future enlargement in size of channel is of little practical value. A gradual filling of the banks of the river between the levees and the growth of the islands in the river tend to counterbalance scour in the channel proper.

"Several thousand cross sections of the river measured from time to time do not show any material change in the channel itself. Although the confinement of the river between levees has brought about large increases in flood heights, it has not caused as yet any cumulative changes in the elevation of the river bed itself The bed and natural banks of the river are continually undergoing the local changes that are to be found in any alluvial stream subject to a widely varying discharge, but the gross effect of these changes of bed and banks on the discharge capacity of any considerable section of the river proper, since the construction of the levees, is so small as to be less than the limits of accuracy of measurement.

CHANNEL CAPACITY UNCHANGED

"After a review of all the evidence, it is concluded that neither the levees nor the crevasses that have occurred in them have yet had any measurable permanent effect on the capacity of the channel of the river itself to carry off flood waters.

"It is not necessary to discuss the effect of a spillway system on the discharge capacity of the river. Before the construction of levees, water spilled generally over the banks in every flood.

"The river channel is made and maintained by the river flowing the year round below the bank-full stage. If the overflows, that last only a limited time, could be confined, they would not for an extremely long time, if at all, affect appreciably the results of the channel-forming processes operating continuously.

"Flood relief by means of reforestation or by reservoirs has no place in practical flood control for the alluvial valley of the Mississippi. Reforestation could not possibly have more than an incidental and minor effect on reducing flood stages. When the Mississippi watershed was in its original state of virgin forests, there occurred floods probably as great as those of modern times.

"Reservoirs at the headwaters of all tributary streams would not store water that falls in the valley itself. Reservoirs in the valley as well as the headwaters would have an appreciable effect in reducing floods in the valley, but their cost for this purpose alone was found to be prohibitive under present conditions."

Paraphrasing President Lincoln: "You may control part of it all the time or all of it part of the time, but the problem is to control all of it all the time."

chapter three

NEW MADRID EARTHQUAKE

We may read a history of the great Mississippi Valley of which the dates are not given in periods of time but only in sequences. Every feature of the valley's surface conforms to the law of flowing water carrying its load of sediment, and the unquestioned conclusion is that no part of this valley was either lifted or sunk by the New Madrid earthquake jars occurring during the years 1811 and 1812.

The legend of the New Madrid earthquake asserts that some of the shallow lakes and swamps of that section were formed by the sinking of the land at that time. Published accounts of this disturbing phenomenon, which have been included in several histories as well as newspapers and magazines, are so exaggerated, unreliable, and misleading that I must devote a few pages to an effort to correct some false impressions.

Mr. Firman A. Rozier in his book History of the Early Settlement of the Mississippi Valley quotes a most extravagant account of the New

Madrid earthquakes of 1811 and 1812 written in February 1836 by Hon. Lewis F. Linn whom he terms "the model Senator of Missouri."

"The memorable earthquake of December, 1811, after shaking the valley of the Mississippi to its center, vibrated along the courses of the rivers and valleys, and, passing the primitive mountain barriers, died away along the shores of the Atlantic Ocean, In the region now under consideration, during the continuance of so appalling a phenomenon, which commenced by distant rumbling sounds, succeeded by discharges as if a thousand pieces of artillery were suddenly exploded, the earth rocked to and fro, and vast chasms opened, from whence issued columns of water, sand, and coal, accompanied by hissing sounds, caused, perhaps, by the escape of pent-up steam, while ever and anon flashes of electricity gleamed through the troubled clouds of night, rendering the darkness doubly horrible. The current of the Mississippi, pending this elemental strife, was driven back upon its source with the greatest velocity for several hours, in consequence of an elevation in its bed. But this noble river was not thus to be stayed in its course. Its accumulated waters came booming on, and, o'ertopping the barrier thus suddenly raised, carried everything before them with resistless power. Boats, then floating on its surface, shot down the declivity like an arrow from a bow, amid roaring billows and the wildest commotion. A few days' action of its powerful current sufficed to wear away every

vestige of the barrier thus strangely interposed and its waters moved on in their wonted channel to the ocean. The day that succeeded this night of terror brought no solace in its dawn. Shock followed shock; a dense black cloud of vapor overshadowed the land, through which no struggling sunbeam found its way to cheer the desponding heart of man, who, in silent communion with himself, was compelled to acknowledge his weakness and dependence on the everlasting God. The appearances that presented themselves after the subsidence of the principal commotion were such as strongly support an opinion heretofore advanced. Hills had disappeared, and lakes were found in their stead; and numerous lakes became elevated ground, over the surface of which vast heaps of sand were scattered in every direction, while in many places the earth for miles was sunk below the general level of the surrounding country, without being covered with water, leaving an impression in miniature of a catastrophe much more important in its effects, which had, perhaps, preceded it ages before.

"One of the lakes formed on this occasion is sixty or seventy miles in length, and from three to twenty miles in breadth. It is in some places very shallow; in others from fifty to one hundred feet deep, which is much more than the depth of the Mississippi River in that quarter. In sailing over its surface in the light canoe, the voyager is struck with astonishment at beholding the giant trees of the forest standing partially exposed amid a waste of waters, branch-

less and leafless. But the wonder is still further increased on casting the eye on the dark-blue profound, to observe canebrakes covering its bottom, over which a mammoth species of testuda is occasionally seen dragging his slow length along while countless myriads of fish are sporting through the aquatic thickets. But, if God in His wrath has passed over this devoted land; if He touched the mountains and they disappeared in the abyss, his beneficient influence is still felt in its soft climate, the unexampled fertility of its soil, the deep verdure of its forest, and choicest offerings of Flora. The lost hills or islands before mentioned are of various dimensions; some twenty or thirty miles in circumference, others not so large, and some are even diminutive in size, but of great altitude, occasionally furnished with fountains of living waters, and all well-timbered."

I have quoted this as an example of the extravagant, entertaining descriptions of this earthquake. Mr. Rozier writes history--he has sacrificed exactness to his penchant for entertainment--this is not history; it is ebullition of a "model" (I thank thee, Jew, for teaching me that word) senator.

Mr. Rosier also states, "Godfrey Lesieur, an intelligent and remarkable man residing at New Madrid, witnessed these earthquakes and gives the following account:

"The first shock was at about 2 o'clock on the night of December 16, 1811, and was very hard, shaking down log houses, chimneys, etc.

It was followed at short intervals, half to one hour apart, by comparatively slight shocks, until about 7 o'clock in the morning, a rumbling noise was heard in the west, resembling and not unlike distant thunder, and in an instant the earth began to shake and totter to such a degree that no persons were able to stand or walk. This lasted perhaps one minute. At this juncture the earth was observed to be as it were rolling in waves of a few feet in height, with a visible depression between. By and by those swells or waves were seen to burst, throwing upwards large volumes of water, sand, and a species of charcoal, some of which were covered, in part, with a substance, which by its peculiar odor, was thought to be sulphur. When these swells bursted, large, wide and long fissures were left, running north and south parallel with each other for miles. I have seen some four feet deep and ten feet or less wide. The rumbling noise before mentioned, the waves, etc. appeared to come from the west and traveled, as it seemed, eastward. After this, slight shocks, varying in severity, were, at intervals, felt until the 7th of January, 1812, when the country was again visited by another earthquake, equally as violent as the two first, and characterized by the same frightful results. Then it was that the cry arose among the people "suave qui peut" (save who can), and all but two families left the country, leaving all their property, consisting of cattle, hogs, horses, and portions of their household effects.

"After the terrible shock of the 7th of Jan-

uary slight ones from time to time were felt. This lasted until the 17th of February, when another very severe one, having the same effects as the others, visited the country and caused great injury to the land, in forming more extensive fissures, sinking high land and forming it into lakes, making deep lakes high land.

"Many of these are now under cultivation, and have proven to be the richest and most productive lands in Southeast Missouri. The damaged and torn up portion was not very extensive, embracing a circumference of not more than one hundred and fifty miles, taking the old town of Little Prairie, now called Caruthersville, as the center. A very large extent of country on either side of the White Water, called here Little River, also on both sides of the St. Francis River in this state and Arkansas, also on the Reelfoot Bayou, in Tennessee, was sunk below the former elevation about ten feet, thus rendering that region of country entirely unfit for cultivation."

Mr. Lesieur's account is probably fairly accurate except regarding sinking or raising areas of land. Mr. Louis Houck quotes it in his History of Missouri published in 1908 and states it was written in 1872, sixty years after the event. He also refers to Senator Linn's account but quotes only one line.

Mr. Houck quotes letters and diaries describing scenes, experiences and surmises of causes, of the New Madrid earthquake and adds:

"The New Madrid region was then only sparsely inhabited and the loss of life and property was therefore inconsiderable. The facts regarding this earthquake have almost faded from popular memory. Many otherwise intelligent persons now pretend to believe that it was no extraordinary occurrence, and that if it occurred at all, it has been grossly exaggerated. But this can in no wise diminish the phenomenal character of the occurrence, and as such it must be considered. . . ."

"As to the primary cause of the New Madrid earthquake", says Professor Edward M. Shepard, (Journal of Geology, January and February, 1905) "it is difficult to make any statement. It may have been due to the readjustment of the fault lines in the Ozarks which frequently have an appearance that does not betoken great age and, further, slight earthquake shocks, which observers described as coming from the west, have been noticed. . . .

"The earth rolled in waves. Then chasms opened, and water, sand, and a black substance resembling coal were thrown up, while sulphurous vapors filled the air. These fissures ran north and south. . . .

"Along Little River and the Castor and St. Francis rivers great bodies of sunk lands are well known. There can be no doubt that large districts of the St. Francois Basin sank during these earthquakes, but it would be a mistake to suppose that the whole country sank. On the

contrary it may be that even some portions of the lands of this district were slightly elevated. ..." (I say it's pure romance)

In 1815 Congress passed an Act affording liberal relief for the sufferers from this earthquake. The landowners were permitted to give up their present holdings and to locate, with the certificates received for their New Madrid possessions, on other public land. This opened a wide door for fraud, speculation, and litigation. The actual sufferers were in nearly every instance defrauded. Before they had knowledge of the passage of the Act of Congress the New Madrid country was filled with speculators from St. Louis who purchased their property at a rate of from forty to sixty dollars per claim, a claim sometimes embracing as much as six hundred and forty acres of land. After so acquiring the rights to the injured land, certificates of dislocation were issued by the St. Louis land office to the purchasers of these injured properties. The owners of these certificates, of course, hunted around for the most valuable public property and located their certificates on it. The demand for certificates being very great the more unscrupulous and dishonest New Madrid settlers would sell their claims several times to new speculators anxious to buy. All this led to endless litigation. Under New Madrid certificates so issued much valuable property was located in North Missouri in the Boonslick country, and near the city of St. Louis, and also near Chicago. One Francis Langlois attempted to secure the Hot Springs of Arkansas.

The relief was only for injury to land. The Act does not describe the character of the "injury" and in fact no relocation certificates applied on lands which have ever been held to have been sunk by the earthquake.

I became acquainted with the locality in 1875, sixty-three years after the earthquake and became convinced at once that the theory was wholly wrong. I believed these lakes and swamps existed from causes not related to the earthquake, which conclusion was afterward thoroughly supported by surveys made by myself and others in that section. The main noted points described on many maps, some of them by U.S. engineers, as "sunk" land were later proved to be naturally formed swamps of the overflowed areas of Little River and St.Francis River in Missouri and Arkansas, and Reelfoot Lake, immediately across the river in Tennessee. Reelfoot Lake is a partially filled channel of an old water course, possibly the Ohio River, abandoned in the early period of the upbuilding of the level plain now filling the eroded valley. Geologists are agreed that the Mississippi flood formerly occupied the western part of the valley and eventually, as a river, occupied the present channel by way of Thebes and joined the Ohio River at Cairo. The old channel of the Ohio was enlarged and frequently changed or abandoned.

The early settlement of New Madrid, occupying only the highlands, was made under the

Spanish regime, principally by French people, and maps were made showing the land-grants acquired by these settlers. A map dated 1804 shows these land-grants on Sikeston Ridge and the highland extending south along the river, and locates lakes and bayous adjacent. The lowland or swamp lying west of Sikeston Ridge extended twenty miles westward to the St. Francis Terrace. It received the runoff water of the Ozark Hills by Castor River, Crooked Creek, Whitewater River, and Hubble Creek immediately at the north and was subject to overflow by the Mississippi River at Cape Girardeau at periods of very high water. These overflows were retarded in their movement by vegetable growth and remained in some portions of the basin during the entire year.

In 1819 a line was run by U. S. surveyors to establish a base line for the sectionizing survey of public lands. This line extended eastward from the Ozark Hills, entering the lowland about two miles north of the present town of Malden in Dunklin County, extending directly east and emerging from the basin at a point five miles west of the town of New Madrid, and beyond to a small lake or pond in the lowland bottoms along the Mississippi River. The survey notes described the basin as covered with well grown matured forest trees of oak, ash, elm, gum, and maple and one cypress brake at the west edge. At each section corner and each half mile distance, the surveyor marked trees as witness marks for land corners established.

He described the land as being wet, and at the locality of what was afterwards termed "sunk lands" he noted that it was covered with clear water, one foot deep, flowing southward. He does not mention any observation of earthquake effect. In 1840, which was twenty one years later, Mr. Phillip Raidt, a substantial citizen of New Madrid, who was later a member of the County Court, observed this area and told me that the forest had been destroyed by the excess water during the long hot summers and the large trees were dead and still standing, as though the land had been cleared for farming without cutting down the larger trees, as was the custom in the country.

The timber showed no distress or injury from water within seven years of the earthquake date but was destroyed by some unusual seasonal or overflow condition occurring within the succeeding twenty-one years.

This basin was surveyed in 1856, and the land along Little River described as "inaccessible swamp" and indicated as "Little River overflow" on the plats. On the plats of one or two townships surveyed in 1860 this overflow was designated "sunk land" evidently accepting the local legend.

In the summer of 1874 a very serious drought prevailed and this overflowed district became so dry that the luxuriant growth of cattail and swamp grasses was burned. This fire did not destroy the green woods on either side

of the "overflow." When I first saw this overflow area in the spring of 1875, the boles of the dead trees had rotted off their stumps and fallen and it was so completely littered with these fallen trees that the hunters and trappers had marked canoe routes to their camps. In 1899 a small channel was constructed for Little River across New Madrid County which drained the excess water off early each summer so that the land became dry part of each season and the logs were then very soon entirely rotted away. Surveys made by me for that channel indicated that the normal surface of the valley had never been disturbed by earthquake influence.

St. Francis River, east of Crowley's Ridge in Missouri, is no river at all. In the formation of the great valley the loess clay hills peculiar to southern Illinois and the northeast portion of Stoddard County, Missouri, extended across the valley and southward at least as far as Helena, Arkansas. The flow of the flood moving southward from the ice cap passed along the east edge of Ozark Ridge and followed this ridge southwestwardly from Cape Girardeau. In the process of time an erosion occurred through the middle of what is now the valley, but did not erode the portion of the hill district which remains as Crowley's Ridge. The drainage from these hills originally flowed westward to the old flood channel; terraces in these creek valleys are still discernible in the narrow Crowley's Ridge. When the erosion occurred the old

floodway west of Crowley's Ridge was filled, and the streams originating in the higher Ozark Ridge captured these old creek channels and flowed east inversely through Crowley's Ridge into the lower and newly eroded valley. The St. Francis is one of these small streams and debouches upon a sandy terrace which resembles the Sikeston Ridge, lying along the east slope of Crowley's Ridge.

This terrace is marked with shallow depressions, frequently a half mile or more in width, which receive the local drainage and are unsuited to the growth of any timber except cypress, tupelo, or willow. The St. Francis occupies these depressions, occasionally finding connections between them, and thus passing from one to another, southward, in the direction of the general slope of the terrace. At the south terminus of this terrace the depression becomes a basin toward which drift the overflows of all the streams of the valley, including that of the Mississippi River; here the St. Francis captures Pemiscot Bayou, becomes the main drain of its basin and thence maintains a clean open channel to the south end of Crowley's Ridge where it enters the Mississippi River. The upper St. Francis channel is confined and deep where it crosses through Crowley's Ridge to enter upon this terrace, and gradually shoals until it flows as an overflow through the "depressions" to the lower end of the terrace, without deepening the sloughs and without a proper individual channel. In the southern and

lower portion of the St. Francis terrace, where it is occupied by the river, overflow water has destroyed the timber in the sloughs, and large areas are covered with flag and other swamp growth which interrupt the flow of the river and maintain a permanent water cover, still preserving some stumps of trees which grew there during a favorable period. This area including St. Francis Lake is designated "St. Francis Sunk Lands."

Pemiscot Bayou, which gives its name to the county, is an outflow or "high bank" bayou out of Cooper's Lake near Hayti, Missouri, extending into the lower land remote from the old river, and maintaining fairly definite channel southward across Pemiscot County, then west and south into the lowest portion of the valley and again west to the western terrace occupied by the St. Francis floods. Pemiscot Bayou carried Mississippi River sediment and upbuilt its shore line. At the point where it touched the western terrace the upbuild was perhaps three or four feet and this obstruction impounded the water of Little River swamp flowing through the low portion of the basin, creating Big Lake in Arkansas, which is termed one of the "sunk land" sections. Pemiscot Bayou, here designated the Left Hand Fork of Little River, extends southward with its normal characteristics, then gradually works westward until it again approaches the St. Francis terrace and forms St. Francis Lake just as it formed Big Lake. This bayou has looping tortuous

bends with smooth curves, noticed in similar larger bayous in more southern parts of the valley, and the fertile sedimentary upbuild, extending about a mile back on each side, indicates the integrity of the channel from source to outlet.

The elevation and soil formation of the land from the river bank at Tiptonville, Tennessee, back about three miles to the edge of Reelfoot Lake and extending about ten miles north from Tiptonville to the river in direct alignment with Sikeston Ridge, corresponds with the character of that ridge. Elevations and character of soil east of this ridge in Missouri correspond with the formation in Kentucky and Tennessee, north and south from Reelfoot Lake, which indicates that Sikeston Ridge originally extended to the old Ohio River channel at Reelfoot Lake. At the west edge of the town of New Madrid there is a channel or an erosion of an ancient overflow bayou filled with a deposit of the clay characteristic of Ohio River sediment. This old channel was evidently an early estuary or delta of the Ohio leading into Little River Valley, which is eighteen feet lower than the Sikeston Terrace five miles west of New Madrid. I heard a captain of one of the Mississippi River steamers, entertaining his guests, describe this old mud-filled channel showing in the river bank, as one of the crevices formed by the earthquake, although cypress trees more than two hundred years old were standing in plain view on its surface. We all enjoy romance.

The Mississippi River has cut through the Sikeston Terrace just south of New Madrid to occupy the present channel location which leads back into the Reelfoot depression about twenty miles south of the lake. There are many outflow channels along the Mississippi River below Cairo which extend across the upbuilt shore to the lower land remote from the river. Sunflower River in the state of Mississippi is one of the most noted. Where this outflow channel is closed by the levee it is more than thirty feet deep and three hundred feet wide.

While the earthquake shocks of 1811 and 1812 did not change the land surface either by depressing or elevating, it did leave its mark on the surface in the nature of "sand-blows." The shock disturbed the surface in a manner very similar to the disturbance of the surface of water contained in a tub when the exterior of the tub is struck a quick, positive blow causing little waves. Many accounts of the earthquake describe this wave movement. The jar was so severe that the surface was broken and the water filled sand substrata was thrown out through crevices, carrying sand and frequently particles of a substance resembling coal, called lignite, which fell back upon the surface along these crevices in ridges on either side. These ridges were frequently more than a foot high and were perhaps ten feet or more in width from the crevices to the outer edge of the ridges. I personally examined many of these sand-blows in

the original forests while engaged as county surveyor for New Madrid County. In a few instances I noticed some smaller trees were slightly disturbed and thrown out of their normal erect position but the older and sturdy forest trees were not injured. These "sand-blow" crevices extended but a short distance below the surface, probably not over thirty feet, evidenced by the fact that they did not spew up sand from the bottom of the mudfilled lakes and lagoons in that region. They ranged in size from slight fissures a few feet long to crevices two feet wide and possibly sixty feet long, and extending generally in a north and south direction. Where the land has been cleared and cultivated the sand piles have generally been worked down into the adjacent soil. The sand-blows are largest and most numerous along a line extending from Caruthersville, Missouri, towards Jonesboro, Arkansas, and gradually reduce in size and frequency until they practically cease at about forty miles north and south from that line. The shock disturbed clay banks and hillsides to such an extent as to create a few landslides and would have destroyed brick buildings.

I visited Charleston, South Carolina, immediately after the earthquake there in 1887 to view personally its marks and effects. This earthquake also caused fissures and exuded substances from the substrata in that region, but I saw no crevices more than one inch wide although I took pains to visit several localities where they were reported to be one foot to three

feet in width. Those good people simply couldn't tell the truth about the earthquake which gave them so great a fright. In that earthquake the brick buildings in Charleston were somewhat affected and in a few instances the brick arches over doors and windows were broken and the keystone thrown out, but I believe no buildings were actually razed. The scientist who reported on the Charleston earthquake stated that it was a landslide due to a fault in the rock strata along the Atlantic coast. Incidentally, the same scientist visited the New Madrid earthquake and reported that some portions of that area were sunk by the earthquake of 1812. We differ.

KOCHTITZKY HOME IN NEW MADRID

Like most river towns old New Madrid had a gay social life. The residents always spoke of "Madrid" with affection. There were a number of comfortable, even pretentious, homes where pleasant evenings were spent at dancing and whist. There were many balls, usually in large halls, with a dance orchestra hired for the occasion or for the whole season by young men who wanted music always available. There was the excitement and pleasure of the steamboat arrivals--and periodically the fearsome thrill of the great floods.

chapter four

NEW MADRID

The Ozark Ridge lies in Missouri and Arkansas, extending from the Missouri River to, or near, the south line of the state of Arkansas. The east edge seems to fairly follow a line leaving the Mississippi River fifty miles above the mouth of the Ohio River, extending southwest to the center of Arkansas, thence nearly south. The west line is less definite but follows the Osage River valley southwest to the west line of Missouri, thence about due south nearly to the Red River. The ridge is low, being from four hundred to twelve hundred feet above sea level. It is generally rugged, rocky or gravelly hills with fairly smooth upland on the less broken ridges, and narrow, gravelly creek and river valleys. A little of the upland is prairie but nearly all of the area is covered with oak forest. East of this ridge lies an area of better soil and better timber which embraces the eastern foothills and the river bottom lowlands extending to the Mississippi River, including the low Benton Hills fronting on the river a few miles south of Cape Girardeau and the similar hills of Crowley's Ridge extending about fifteen degrees west of south, midway through the wide bottom.

From the southeast corner of the Benton Hills, the flat-topped Sikeston Ridge or terrace, three to eight miles wide, fifteen to twenty feet above lowland and generally above river flood, extends south to the Mississippi River at New Madrid and about ten miles farther, along the river. An area of very sandy land lies immediately south of the Benton Hills and east of the Sikeston Terrace, extending to within ten miles of the river. The low bottom along the river is marked by abandoned channels or bends of the river and is below flood line.

Crowley's Ridge is narrow, with an abrupt slope on the east side and less steep, sometimes quite flat, on the west side.

The St. Francis sand terrace lies at the east foot of this ridge along the south half of its length in Missouri. It gradually subsides to lowland levels about forty miles south of the state line.

The belt of lowest land lying between Sikeston Terrace on the east and Crowley's Ridge and St. Francis Terrace along the west, is the Little River swale or valley. It is about twenty-five miles wide at the foot of the Ozark Hills and fifteen miles wide at the state line. It is eighty miles long in Missouri, extending perhaps thirty miles into Arkansas along the St. Francis Terrace. Between Crowley's Ridge and the Ozark foothills in Missouri, lies the flat bottom occupied by the St. Francis and Black rivers, which drain the east slope of the Ozark Ridge.

This corner of the state lying between the Ozark Ridge and the Mississippi River has become particularly designated "Southeast Missouri." From Cape Girardeau, on the highlands at its northern edge, to the state line is about one hundred miles and its greatest width is about sixty miles.

The early settlements in Southeast Missouri were confined to the dry uplands—the foothills of the Ozarks; the clay hills of Crowley's Ridge and the sandy terrace along its eastern side; the Benton Hills and the sandy land just south of them; the Sikeston Terrace; and the upbuilt shore-land along the Mississippi.

The lowland, which constitutes more than half of Southeast Missouri, was all flat and overflowed swamp. It was covered with a heavy growth of oak, gum, elm, ash, maple, cottonwood, and cypress timber. In the lowland there were a few very low, flat, wet ridges occupied by squatters engaged in hunting and trapping.

Cape Girardeau was the trade center for all of this region and there were several main roads leading over the ridges to the town. The King's Highway, the old Spanish trail from New Madrid which continued to St. Louis; the Crowley's Ridge Road which also extended south to Helena, Arkansas; and the neighborhood roads from the Ozarks. All commerce was by the river, and Cape Girardeau was a thriving business center until the building of railroads developed towns in the settled districts and thus cut off the trade.

New Madrid is a "river town" situated on the Sikeston Ridge at the point where it touches the Mississippi River. This highland was occupied by the early settlers under Spanish regime, as it was not subject to overflow. The town, about one thousand people of which perhaps one-fourth were Negroes, is a very old community center and in 1875 contained few inhabitants who were "newcomers." The larger plantation owners had been slaveholders and managed their farming of corn and cotton very much as on other southern plantations. The freed slaves remained as tenants. There was little sentiment for construction of fine homes in the town and no pretense on the farms and plantations. It was notable that these plantations were frequently mortgaged and upon the death of the owners they were likely to be sold and distributed in smaller tracts. The land was so fertile and capable of producing crops without rest or fertilization that it was a desirable investment for income. Therefore, these small tracts were soon gathered together again by another enterprising man who held them until his demise and again they were distributed as before. This was not a universal experience but there were a number of instances which attracted my attention.

There were no brick houses in the town and only two in the county. The houses were mostly one-story and not all of them were painted. The Catholic Church was the principal church; the two or three Protestant churches were very feeble indeed. The public school was little more than a farce. Children of the well-to-do fami-

lies were mostly sent away from home to finish education at Catholic schools. A few of the boys attended the universities in Kentucky or Virginia. The courthouse and jail were wooden buildings, both of which were later destroyed by fire. The saloons were popular and were restricted in number only by the patronage that could be developed. The post office was conducted in a small frame office building by a German tinner, probably the only white man in the town who could qualify as a Republican.

The landing for boats in these river towns was necessarily at the location where the deep water of the river was near the shore. River towns are, therefore, located on the exterior of the bends of the river where the accelerated current erodes the shore. They were subject to the emergency of moving back as the river encroached. The bank formation was about five feet of firm surface soil beneath which was rough clean sand. The swift current would sweep away the sand substrata and undermine the surface, which would split off in long flakes several feet wide and sink or topple over into the boiling murky water.

The early maps indicate that the shore line at New Madrid moved by erosion during the period from 1804 to 1880, a distance of more than one mile, and the entire town had moved back once every ten or fifteen years. This accounts for the fact that there were no brick houses but only light frame buildings, including stores, courthouse, and churches, which were

not permitted to fall into the river but were moved on sills with rollers to new locations as the river encroached. Under this condition the river front was the least presentable part of the town. The abandoned front was never maintained, the outbuildings were frequently left where they were built, the old cisterns were not always filled or covered, and the few old shade trees were soon destroyed. There were no street lights, and plank sidewalks extended from the business section of the town to the wharf. There was no hotel but several private homes near the river front were available for the purpose. A stranger traveling through the country found it necessary one dark night to hurry across lots from his boarding house to the boat landing. He walked directly into an abandoned cistern but fortunately suffered no injury except mental distress and a soiled suit.

The erosion between 1875 and 1882 was more than a quarter mile. In the latter year the half mile of caving bank in front of the town was securely covered by a revetment of woven willow mats about one hundred feet wide extending down the sloping shore into the river from about ten feet below the top of the bank and weighted with riprap stone. This was promptly covered with sediment and remains perfect after fifty years of service.

The climate was fairly healthful and mild. Crop failures were rare and life was comfortable and easy for these people. There was little spirit of enterprise and business strife, as is more characteristic of the northern and western states.

The old "Squire," a devoted follower of Izaak Walton, objected to alfalfa because it required harvesting every thirty days--"What? Make hay every month, all summer--not me!"

New Madrid had little communication with the outside world. A trip on a river steamboat to New Orleans, St. Louis, or Louisville was about the only opportunity for travel. Parties of young people frequently arranged such jaunts for their pleasure; the steamboats were comfortable, and many of them engaged to furnish meals for the period of the trip at a fixed price, and carried a small band to provide music for dancing. Cards and the bar were attractive features.

There were a number of interesting characters in the little community. The public officials were easygoing, straightforward men, members of the leading families. John A. Mott was clerk of the circuit court and continued in that office for thirty-six consecutive years. He was not educated as a lawyer but became so well informed regarding the processes of the law that he was more consulted than the practicing lawyers of the courts. He was always at his office, well informed regarding land titles, and was depended upon to take care of the business of many of the larger landowners.

I was much entertained by his handling of a case between two of his clients. Murray Phillips inherited the estate of an uncle embracing perhaps a thousand acres of excellent farm land. Part of this estate had been sold by the administrator for debts. In this sale a small strip of

land, twenty-five acres, was omitted. This twenty-five acres joined the property of Joseph Hunter whose business was owning and operating farm lands. Mr. Hunter learned of this situation and inquired of Mr. Mott whether that land could be bought. Mr. Mott outlined a legal process whereby the land could be sold for the benefit of the estate and engaged to handle the matter. As lands were sold without much advertising, it happened that Mr. Phillips was not informed of the sale. Mr. Hunter bought and acquired perfect title; borrowed my compass, and without notice to Mr. Phillips located the line between his purchase and Mr. Phillips' property; built a very strong new rail fence which embraced this twenty-five acres into his own farm; and then sowed the tract to wheat.

When Mr. Phillips noticed what had been done he consulted Mr. Mott. After Mr. Mott had explained fully what had happened Phillips declared in very emphatic language that "old Joe Hunter could not run over him." Mr. Mott suggested that although Hunter had a title he had perhaps trespassed by entering Phillips' field without permission or notice. Phillips engaged Mr. Mott to prepare a legal action against Hunter for trespassing, which he did and for which he charged a fee. The contention, therefore, was brought into Justice of the Peace Court in which trial was had. The only possible decision was against Mr. Hunter for unlawful entry and detainer. The attorney for Hunter appealed the decision to the Circuit Court which could not hear the case until after the wheat ripened, and Mr. Phillips had opportunity to harvest and sell

it. Decision in Circuit Court confirmed the Justice Court. Mr. Hunter's attorney then proceeded by proper process to secure for Mr. Hunter possession of his own land.

The first time I saw Mr. Hunter he had ridden into town on a small, haggard mule without saddle. He wore a rough blue shirt, a pair of blue cotton overalls and an old black felt hat. He had on no other article of clothing, his overalls slipping up almost to his knees and his bare feet protruding. Mr. Hunter was good for anything he promised and more charity passed from his purse than from that of any other man in the community, and with less publicity.

He was a pillar of the Presbyterian Church in that town. He was kindhearted, fair, and perfectly honest. He was a good judge of horses and owned a very remarkable buggy horse named Jim, which he drove to a high-wheel sulky on his trips about the farms. Jim was above average size with a very large head, high shoulders and low hips, ill-shaped, but very strong and a good traveler. I caught up with Mr. Hunter on the road about twelve miles from town one summer evening, on my riding horse. He was driving leisurely and after a little visiting I said to him, "I must ride ahead, I want to be home early."

"Good night, Otto," said he.

I galloped on and looking back after a few minutes, I noticed that he was tapping Jim with a little switch, perhaps two feet long. He presently passed me, Jim's long forelegs doing a-

bout six feet at a step in regular action. I hurried my horse to keep even but Jim paced steadily on. Uncle Joe bade me good-bye again, that being the last I saw of him that evening. My horse could not keep up!

One day a boy approached him to rent forty acres. "What is your name?" said Mr. Hunter.

"My name is Jimmy Baker. You know my father."

Jimmy was very small for sixteen years so Mr. Hunter hesitated; "Can you farm a forty?"

"Yes, Mr. Hunter, Forty acres of corn."

"Well, I reckon it will be all right."

"I want you to sell me a team of mules, Mr. Hunter."

"Well, well, Jimmy! I reckon I can do that."

"And some harness and a plow?"

"All right, Son, I'll stay with you!"

Jimmy made the crop, made good on payments and became a regular tenant for Mr. Hunter. He remained on the same farm, gradually increasing his cropping area, until he was manager of the entire place of more than a thousand acres. He put his profit margin back into farming business and made other investments until he had accumulated $75,000.00 before he bought any land on his own account. When the reclamation of the swamp lands was fairly well un-

der way he purchased four sections lying in a square, which he developed for himself but continued as a tenant on Mr. Hunter's farm. He now lives in Sikeston in a beautiful home built on a lot presented to him by Mr. Hunter.

The Little River overflow area, six miles west of New Madrid, was constantly fed by a supply of clear fresh water from the small streams entering the basin at the north, and never became stagnant. The timber district was well stocked with deer, turkeys, squirrels, and fur animals. The open overflow and channel had grinnel, black bass, crappie, catfish, frogs, turtles, and snakes. During the season, this was a great feeding district for wild geese and ducks.

This open overflow extended north and south along the old bayou channel of Little River a total distance of about twelve miles, varying from a half mile to two miles in width. The water was about two feet deep at the middle, gradually shoaling into the timber on each side on land which was not overflowed except during a wet season. It was covered with cattail flag and swamp smart-weed, growing in separate leads or irregular areas of slightly differing depth of water and character of soil, as preferred by each. In deeper ponds and along the river's edge grew the tall lotus plant (locally called yoncapin) with slender stems lifting their broad round leaves, often more than a foot wide, and big, white tulip-shaped blooms above the water, waving awkwardly in every breeze. A few brilliant, white, starry water lilies, with dark

green leaf disks, floated on the surface of the clear water of the shallow river, their roots in rich mud six to ten feet below.

Clumps or fringes of young cypress, always a beautiful tree, seemed to cling to the looping bends of the shallow pretense of channel. A dense cypress forest, fringed with pale green willows, formed the border for this wide verdant carpet of variegated pattern in shades of living green. It was beautiful in fair weather or foul, and charming on a breezy day in June.

But the day must be breezy. On a still day the mosquitos rose from the protecting vegetation, and literally swarmed in the shelter of the forest. A veil or net carefully attached to the wide brim of a hat, drawn close by a string about the neck, would protect our faces, but we could not wear gloves in summer. The poisonous moccasins and other water snakes were everywhere. They came out of the water to bathe in the sun. They curled on the tufts of smartweed and on exposed logs; they wrapped about bunches of flag, on branches of bushes and occasionally dropped into the little canoes in which we could push, with some difficulty, through the thick vegetation.

The margin of the swamp was a resort for raccoon and mink, which fed in the flag patches during the latter part of the summer and autumn. The fish would seek the deeper water of the pools of the river channel during the very hot days and in the later season.

The New Madrid people enjoyed the hunting

and fishing, and here one summer day I met Mr. Louis Waters fishing on Little River. He had a very perfect hunting boat, much larger than the usual canoe, made from a large ash tree, with capacity to carry five or six men. Mr. Waters was a large, fleshy man with a prominent arched nose. He was a good liver and looked it. The fish had come out of the shallow water into the deeper holes of the channel and he was trolling for bass and crappie in the open water, in the bright sunshine of a June day. He was having success and in his high state of enjoyment, with perspiration dripping from his face, he was a picture to remember.

I became well acquainted with him and enjoyed the benefit of his library which contained a number of books on philosophy and religion, among which, I especially recall, were the philosophy by Feuerbach and the treatise on the Christian religion and miracles by Hittel. During this summer I was reading Hume's History of England and Hugo's Les Miserables, which I believe is the one book of greatest interest to me in all my reading.

While I was reading Hittel there appeared in the newspapers the address of Robert Ingersoll entitled "Mistakes of Moses." This address was so nearly an exact following of Hittel's chapter on the same subject that I challenged Mr. Ingersoll in the public press as a plagiarist and he answered, through a newspaper interview, "The acrimony of those who love their enemies is beyond understanding."

Mr. Waters died a few years later, and his widow, an ardent Catholic, asked me to indicate to her the different books in the library which were not in accord with the teaching of the Catholic Church, and these she resolutely burned in her fireplace. I offered to buy them but she said she felt it would be an unpardonable sin to let anyone have them under any condition.

Feuerbach insists that we worship, if we do worship, our ideal of virtue. This seems to accord with the evidence of history describing the characters of the deities worshippd by different peoples. Certainly we claim the privilege to worship, "each man according to the dictates of his own conscience" and it necessarily follows that we put aside that which is repugnant and embrace that which is congenial; we choose our God.

The progress from savagery to civilization is the progress of understanding of the beatitudes of the Sermon on the Mount, which is the summation of wisdom:

> "Blessed are the meek."
> "Blessed are they which thirst
> after righteousness."
> "Blessed are the merciful."
> "Blessed are the pure in heart."
> "Blessed are the peacemakers."

And of these it should be said, "Ye are the light of the world." This is the religion which knows no miracle but the miracle of the ascent of man.

chapter five

PIONEERS

The highland in New Madrid County lies along the river and on the Sikeston Terrace, The low, overflow belt lying west of it was practically a barrier against communication with settlements along Crowley's Ridge. This section originally hauled its cotton and coon skins to market at Cape Girardeau, or Helena, Arkansas, about two hundred miles apart, but the most accessible river points, and brought back salt, coffee, dry goods, drugs, hardware, and other needed supplies. Just prior to the Civil War two rough roads, crosslaid with poles and rails in the boggy places, had been built across the swamps. One of these roads, locally known as "The Pole Road," extended from the river just about ten miles below New Madrid, directly west to Dunklin County, which is an excellent cotton producing area on the St. Francis Terrace. This was a toll road, built to secure a shorter route to the river. It led through the settled land along the dry upbuilt bank of a bayou known as Portage Bay, to Little River. Then it extended for ten miles through wooded, overflowed bottoms where it was necessary to build

the road embankment from two to four feet high to be above the water level. Numerous openings were left in the embankment for the passage of water, as it did not flow in channels but spread out over the flat land. Plank bridges had been built across these openings. In many places the planks had rotted away and had been replaced by split logs or rails spiked to the bridge sills. A ten foot roadway was closely crosslaid with poles as the embankment was of clay and there was no other material available for a supporting surface. In the middle of the swamp a deeper slough called New River was crossed by a bridge perhaps a quarter of a mile long. The toll gate was located on this bridge and the toll charged was seventy-five cents for a two-horse wagon or perhaps twenty-five cents per bale of cotton hauled. The road was built by Henry E. Clark and the little town at its western end was named Clarkton. It was a profitable business enterprise until railroads brought shipping points nearer the farmer. Another road was built across the Little River swamp about twenty miles north of New Madrid, from a ferry at Hickman, Kentucky, to the Crowley's Ridge district of Stoddard County. I think this was a free road and was very poorly maintained at the time I came to New Madrid.

When we arrived in New Madrid to begin our surveys we were entertained for a few days by James H. Howard, Presiding Judge of the County Court, who described the dormant condition of the New Madrid and West Prairie Road Company franchise. This company had been

organized by Richard J. Waters, Richard Phillips, Alfred A. Laforge, Elijah W. Horrell, Louis A. Waters, John C. Underwood, William W. Waters, Frederick A. Bryan, Luke Byrne, and Robert A. Hatcher of New Madrid County and Samuel W. Allen, Alexander Blanton, and Given Owens of Dunklin County and incorporated under special act of the Legislature in 1855 for the purpose of constructing a toll road across the swamps directly west from New Madrid to the highland of Dunklin County.

The county courts of New Madrid and Dunklin Counties had been authorized to take stock in the company. There had been a grant of one hundred thousand acres of swamp land to aid in carrying forward this expensive undertaking. The Road Company made a contract with Francis Biggins and W. N. O'Bannon for construction of the road pledging the land grant as part of the compensation.

These contractors cleared the right-of-way and proceeded to build the earth embankment and the bridges for the road. They became indebted to parties furnishing supplies and part of the land was eventually sold under judgments against the contractors. The road was not finished for use before the Civil War interrupted all business and nothing further had been done to complete it. I reported the condition of this enterprise to my father who came down and developed a proposition to the stockholders for taking over the enterprise and completing the road. He interested Major George B. Clark of Potosi, Missouri, then State Auditor, who joined him in the venture.

In March 1876 my father and Major Clark arranged to take a canoe trip, the only means of travel, to inspect ten miles of the old roadbed. We started from Pawpaw Landing about eight in the morning in two canoes. We had good traveling two miles across the overflow until we entered the timber district where the water was shallow and there were brush and logs. We upset our lunch and ate it about 10 a.m. Our hunter guide insisted on going a mile out of our course to see some bear trees in Whiterat Slough, which delayed us two hours. We got back to the roadbed about 3 p.m. when a steady rain set in. We reached Tom Tate's empty hunting cabin six miles from Pawpaw after dark, built a good fire, spread Tom's bed of oak leaves to receive four and "put up" for the night. Next morning our hunter killed a wild turkey which we took with us for our breakfast about 11 a.m. at the home of James Stewart, on a little farm where the town of Parma now stands.

The road enterprise contemplated building a plank road twenty-one miles long. Perhaps one-half of the distance could be maintained as an earth road but nearly all of the other half must be planked. To complete the work seemed to require at least $100,000.00. Neither my father nor Major Clark had any capital which could be used in the enterprise. Mr. A. T. Shead of Defiance, Ohio, who came to Missouri to secure walnut timber was directed to this section by a talkative clerk in my father's office.

Mr. Shead became interested in the road

project as a timber venture, although the swamp land produced no walnut timber. Mr. Shead had failed in business and was no support as to capital, but he suggested that the plank road was out of date and that the enterprise should be changed into a railroad franchise. The County Court and the stockholders of the original company approved the plan of building a narrow gauge railroad on the embankment for the wagon road. Mr. Shead then brought the venture to the attention of Charles L. Luce of Toledo, Ohio, and both became stockholders. Mr. Luce was an enterprising, successful businessman who owned a wholesale drygoods business in Toledo, was interested in the street railroad, a wagon manufacturing corporation, and perhaps other western enterprises.

He was familiar with the development of the rich "Black Swamp" of northwest Ohio and northeast Indiana which had been a great timber section and was then being developed for farms, and he believed the Southeast Missouri lands were similar and could be easily reclaimed. The "Black Swamp" area was not subject to overflow but was swampy because it is level and the limestone soil is inclined to be heavy and compact. The Wabash River drains the south and west side, and the Maumee drains the east edge into Lake Erie. The city of Fort Wayne, Indiana, is situated on the divide. Mr. Luce did not fully appreciate the headwater problem of the Little River Valley.

The name was changed to the Little River Valley and Arkansas Railroad Company of which

each of the four owned an equal interest. All the property of this company was made subject to bonds which were issued and placed as collateral in Mr. Luce's hands for funds to construct the railroad. My father was made General Manager, Mr. Clark was made Secretary and Treasurer. The work of constructing the narrow guage railroad was not contracted but was directed from the railroad office. Construction began in the year 1877. The winter of 1877 and 1878 was very cold and ice formed on the swamp waters of sufficient strength to permit the use of oxen in hauling the bridge timbers, procured from the lands belonging to the company, to the bridge locations; supplies to be carried across the swamps and other work to progress. Equipment and rails were procured, cross-ties were of the cheapest possible for that use and the rails were eventually laid to the site of the new town of Malden in Brom. Beckwith's cotton field on the sandy St. Francis Terrace in Dunklin County, the western terminus. This remarkable railroad, twenty-seven miles long leading from the bank of the Mississippi River across a country where construction was very difficult, requiring over two miles of trestle bridges, to a section of farm country producing no freight except cotton or fur, and projected with little capital, had been completed in a period of about one year.

A very small amount of "legal tender" was used. The thirty pound rails and secondhand equipment were bought on deferred payments; Mr. Luce supplied large stocks of clothing, to-

bacco, and so on, which were passed on to laborers on "orders" in lieu of money, by a store owned by Judge J. H. Howard and Louis Block. Groceries, freight charges, and postage stamps were cash, which was furnished by Mr. Luce.

The engineer corps was composed of myself, my brother John, and George W. Peck, who was later selected as agent for the railroad company at Malden and became a leading citizen of the new town. The "general manager" would not, or could not, supply equipment and I used my thirty-three foot surveyor's chain, measuring three chain lengths instead of the standard one hundred feet for each working section, and with an old transit I managed to align fairly regular curves.

The traffic of the road was barely sufficient to pay operating expenses. The fuel for the engines was wood, cut into two-foot lengths, procured from timber along the line; all members of the train crew and "dead-head" passengers were required to aid in loading the fuel on the old ten-ton engine, and frequently helped to fill the water tank by hand from the accessible ditch. A witty Irishman commented that all the stations on this railroad were "landings." It was considered satisfactory if we could make one trip per day, starting from New Madrid about eight o'clock in the morning and returning that evening. It was not unusual to return the next morning, having been out all night.

The General Manager and the Secretary-

Treasurer, who owned exactly one-half of the stock of the railroad, were both very poor men with families and it was necessary that their salaries should be paid at least in part. The stockholders annual meeting always brought up the question of paying interest on the bonds. Mr.Luce would complain about his situation and always received the same answer, as the facts did not change and business did not increase. After a day of demand and refusal, which was about all the conversation at the stockholders meeting, Mr. Luce would arrange with me to spend the next day with him on the land, especially talking about drainage development.

During the three years of operation of the railroad I was without income. I had no expensive habits. I read, loafed, and in the evening often played croquet. I had no restless desire to leave the pleasant home where the lazy springtime and summer passed so quietly. But the old chums at Jefferson City, who had piqued me with preferring to be a big frog in the little puddle of New Madrid rather than a little frog in the bigger puddle of the capital, would come to mind with the result that I asked for $50.00 of my book credit with the railroad. I held a proxy as a Crittenden delegate to the Democratic convention, to meet July 10th at Jefferson City. "There is no money, but you may have the proceeds of any new business you can develop for the railroad," replied by father.

There was a demand for wagon material in St. Louis. Taussig and Abels offered to pay

boat freight and about $5.00 per cord for timber suitable for wagon hubs. I got some help and cut thirteen cords of oak blocks which weighed about a hundred and fifty pounds each. This was delivered on the river bank by the railroad about June 15th, convenient for loading on a steamboat. The river was at low stage and the boat officers required that the hub blocks should be placed on board the wharfboat. I persuaded my brother to help and we worked all day that hot Fourth of July moving those heavy blocks down the sandy, sloping river bank and ranked them neatly on the river side of the old wharf boat. This caused that side to settle below a dry seam and early that evening the watchman reported the old boat filling, so that we, with some Negro helpers, pumped all night and part of the next day to keep it afloat until the boat arrived. My timber passed inspection perfectly and I received $51.00 net.

At Jefferson City I had a room on the same hall with reporters at the old Madison Hotel where Ed Caruthers vouched for me. We had cases of champagne; we sang, "Go Away Old Man" and "Mary Had a Little Lamb" until two a.m.

I stayed one week, but things were not what they used to be. Fanny was married. Sally, valedictorian in my class in high school, youngest in her family, was still a miss because (the story went) her practical mama declared, "No man should take out the bottom rail of her fence first."

Arrived in St. Louis I bought a ticket home

with meals included, transferred forty-five cents to my left pocket to pay the porter, and proceeded to spend the remaining $6.00 for a slender gold ring for my eldest sister, a copy of Les Miserables and a few simple toilet articles. The hub-block money was dedicated to pleasure only.

At the next election I became a candidate for county surveyor. At that time there was no provision for printing ballots. Each candidate supplied his friends with cards or tickets with his name printed in and blank lines for each office except the one to which he aspired. I was not known beyond the one town; I had no "workers" at the voting precincts. My opponent was an old citizen and rather popular. His name was Farmer, easy to write correctly. My name Kochtitzky--impossible! Farmer was older, with a family.

My problem was about equal to standing an egg on end, and solved very much as Columbus is said to have solved the egg puzzle. I proposed to each of the important candidates that I would print his name and that of his opponent on my ticket leaving only Farmer off. This made a most convenient ticket for use in hurried work. I then fastened my tickets in blocks of about twenty on shingles for convenience, and had the satisfaction of seeing them in evidence everywhere. Mine was the smallest majority.

This was an election to fill a vacancy and the Secretary of State advised our county clerk there was no provision for election of surveyor

that year. I knew that my father and the reenfranchised Democrats had been aggrieved because Montieth, appointed State Superintendent of Schools by the last Republican Governor, held over two years under a Democratic administration, and they had amended the law to provide that vacancies should be filled at the first succeeding election. I called the Secretary's attention to this and duly received a commission for an office in which I earned $33.00 per month and kept a horse and buggy at my own expense. Forty-eight years later I proposed a bill for amending the Missouri statute on "Surveyor" to conform with the instruction of the U. S. General Land Office regarding "restoration of lost or obliterated corners" and I shall continue to present it each session until the members can spare time from politics and other personal matters to attend to business. Missouri needs a special nonpartisan department of "Revision of Statutes" to prepare and present the bills which should have attention.

The first sand-clay road in Southeast Missouri was built by George W. Steele, who succeeded me as surveyor, to span a stretch of one and one-quarter miles of clay, seven miles north of New Madrid on the main road between his farm and town, which was always impassable after the winter rains set in. He spread about three inches of sand over the surface and by prompt maintenance for one year developed a very satisfactory road. Mr. Steele was an inveterate hunter and had a cabin on a little dry land about two miles west of his place in the

Little River Swamp. He kept a good supply of provisions and was therefore so much annoyed by self-invited guests who occupied his cabin when he was not there, that he found it necessary to discourage his visitors. He had an old "coon" dog whose days of usefulness were numbered. He killed this dog and dressed the hams to fairly represent the hams of a small deer and left them hanging in his cabin. The visitors ate the dog and George told the story. Some of his friends insisted that the facial features of George Washington Steele very much resembled those of the original George. He was later elected Representative and served two terms or more in the Legislature where he attained some reputation as a poker player.

We had operated the little railroad three years when some St. Louis capitalists conceived the idea of building a railroad to St. Louis through the cotton belt west of the Mississippi River to connect with some roads owned by them in the cotton district of Texas. This venture was promoted by J. W. Paramore of St. Louis, S. W. Fordice of Arkansas, and others. It happened that Major Clark and my father were well acquainted with General John S. Marmaduke, afterward Governor, who was in touch with the organizers of this railroad company and through him the Little River Valley and Arkansas Railroad property was called to their attention as a suitable link already built over a difficult section, in their line from Cairo to Texas. These promoters were building a railroad eight hundred miles long and constructing it narrow gauge. General

Marmaduke was able to bring about a sale of our road for a price of about $243,000.00 of which $195,000.00 was paid to Mr. Luce. The sale of the railroad did not include the land. Mr. Luce had acquired the land interest of Mr. Shead; Major Clark and my father sold their interests to him for $20,000.00.

My father continued to live in New Madrid, holding at different times the offices of School Director, Mayor, and Judge of the County Court. In 1884, when General Marmaduke was elected Governor he appointed my father Labor Commissioner. During his term in this office there occurred two strikes on the Gould railway system. In March 1885 a strike by certain employees of the Missouri Pacific Railway in Missouri and Kansas had been adjusted through the intercession of the governors and other officials of the two states. In 1886 nearly all the railroad employees except conductors, engine men, and firemen, had joined the Knights of Labor organization. It became apparent that the executive committee of this organization had determined to require that all grievances of railroad employees be submitted to it for adjustment, which involved a demand for recognition of the Knights of Labor as such by the Southwestern (Gould) System. The railroad managers were determined to deal only directly with their employees. To enforce the demand for recognition a general strike was ordered. All Knights of Labor members were ordered out and traffic was suspended. The strike lasted two months with great inconvenience to the public, destruc-

tion of property, and loss of life. My father's official report of the strike concluded as follows:

> "There was in the struggle something that attracted the attention of all the world. There was the grim, unswerving fixedness of purpose of H. M. Hoxie. He stated that the time had come when the question had to be decided whether he should run his own railroad or have the Knights of Labor run it. He never forgot the issue and never relaxed his determination to 'fight it out on that line.'
>
> "On the other hand, there was an army of desperate and determined men struggling for a something; they themselves scarcely knew what, or at least could not agree upon. They had been made to feel that they were oppressed. The precise acts of oppression could not well be defined, yet they must have believed that they were the victims of the greed of corporations, otherwise their desperate efforts to win a something that was intangible and visionary could not have lasted so long and cost so much of wealth, comfort, and human life.
>
> "It is fashionable to condemn everything that has proven unsuccessful, but in the great strike it is more than probable that this strike would have had much of public sympathy and moral support even if they had no sufficient

cause, had not the vicious element become dominant and deeds been enacted that shocked and alarmed the people. The total disregard for the conveniences and necessities of the public and the losses they were forced to sustain, were potent influences in eliminating a moral support, without which no cause can succeed.

"Every right-thinking man necessarily desires the elevation of labor and the betterment of the condition of the laborer, but this must not warrant an encroachment of the vested rights of others.

"The strike, as senseless as it appears to have been, will not have been without its good effects if it speedily brings about the enactment of laws that will give greater protection to labor and greater security to property against vandalism."

My father retired as Labor Commissioner when David R. Francis was elected Governor in 1888, and engaged in an unfortunate zinc mining enterprise in Southwest Missouri. He died in Jefferson City in 1891.

Major Clark built a beautiful home in Cape Girardeau and established a newspaper there. This enterprise, a Democratic paper in a Republican community, was a failure. He lost all his property, including his home, and drifted to St. Louis.

Mr. Shead traded his undivided interest in the railroad lands to Mr. Luce for selected timber tracts and engaged in the lumber business which proved unprofitable. He died in New Madrid a few years later.

During the years we were operating the railroad I was inclined to stay at home rather than engage in any employment away from home. I leased a five hundred acre farm and subrented to tenants for corn and cotton. Of course, I got the poorest tenants in that community, the better workers having secured their usual places. All but two of these tenants were Negroes and they were a pretty hard lot, among whom was Henry Fisher. Henry was about as no account as possible, but I did not fully appreciate the fact. He had an old, used-up horse and undertook a few acres of very soft, sandy land. He worked for another farmer during the corn-gathering season that year. Old Henry did not always keep his dates and this neighbor sought to compel him to comply with his engagement or pay back the money advanced during the summer. To accomplish this he went to Henry's stable lot one day and led away his old horse without any pretense of legal right to do so. Henry got me into the matter by his plaintive account of this arbitrary and unfair method, and we procured a writ by which we undertook to recover the horse. This brought us into court and the lawsuit, after one or two trials, during which time the horse died, resulted in a judgment in favor of Henry for about $50.00, which

was paid in court. Before I got through with my business relations with Henry Fisher I realized that my lack of acquaintance with "free niggers" and my bringing up in the northern states, including the reading of Uncle Tom's Cabin and other wartime literature, had led me into an act which warranted the conclusions of the author of "A Fool's Errand." My neighbor's method of holding these irresponsible freedmen to their engagements was justifiable. I have neglected to apologize to this neighbor, which is one of the sins of omission of my life.

Another year I farmed some land along the Mississippi River which was subject to overflow.

Flood stage of the river is caused by the rains in the spring and early summer months augmented by the melting snows of the remote tributaries of the Missouri River, therefore the overflow of its lower valley occurs usually in the months of May, June, and July. The Ohio River discharges its spring floods at Cairo, in the months of February, March, and April, which, when the tributaries and main river are high simultaneously, frequently exceeds the flood peak of the Mississippi. It passes down the valley before planting season and, therefore, does not create as great damage as the later flood by the main river. A portion of the overflow land, usually along the river shore, was farmed for corn and cotton which may be planted after the Ohio flood, risking the occasional overflow of the Mississippi. Such farms or plantations have

very meager equipment of buildings and fences. The soil is exceedingly fertile, crops can be grown with little cultivation and the loss of one crop in three does not embarrass the farmer. The few people who live on lands subject to overflow prepared for the floods in building their houses and barns. In many places there were large mounds built for a safe retreat for the livestock. The slow approach of the floods enabled the less provident to remove,with their effects, to the highland for the period of the flood.

These overflows would sometimes cover the lowland to the depth of ten feet and were a great convenience and facility for getting out the heavy timber. The trees were cut down and only the tops cut off and these full-length boles were rafted together and floated down stream to a safe harbor, where they were later cut into lengths for lumber.

I farmed one hundred acres. I planted corn early and suffered three floods before I succeeded in getting a crop started and then could farm only about one-half of the cleared land. I neglected to ship out and was caught by a very early Ohio River flood the next February. I stored my corn on my haystack on the highest land on the farm. The overflow rose to eight feet around the stack. I engaged a steamboat which anchored to a cottonwood tree and loaded corn directly from the haystack;but it was most wonderful corn!

I rented this farm from Judge Howard who offered to sell me six hundred acres of fine timberland fronting on the river for $2.00 per acre. There were many cottonwood trees on it measuring four feet or more in diameter, and fine oak and ash. This would have been an ideal forestry property. The profit in harvesting this timber would have paid for the land and for re-foresting with the quick-growing cottonwood. I am writing this fifty-four years later and my new trees would now be over three feet in diameter, worth several hundred dollars per acre. There are large areas of these low rich bottoms along the river which should be re-forested.

AN EARLY DREDGEBOAT

One of the first dredges digging a ditch, possibly near Paw Paw Landing (now Lilbourn) in New Madrid County, which was constructed by the C. L. Luce Company in 1885.

chapter six

MARKING TIME

I presume the average marriage suggestion culminating in the accomplished fact is more or less a result of fortuitous circumstances. Without detailing the circumstances related to this subject, I will give only the concluding fact that I married a young lady from Virginia who had followed her opportunities in teaching school, and was thus engaged in New Madrid during part of the year 1883. I had dissipated about all the $1500.00 earned during construction of the little railroad, in business efforts for which I was unfitted. I accepted a position as clerk in my brother's business in Malden, and we established ourselves in one room of his home and had our meals with his family. Within two months after our marriage he suffered the destruction by fire of his grain warehouse and elevator. This loss was more than his crippled business would sustain and his store had to be turned over to creditors.

At that time my assets were about $100.00 worth of furniture and a wife. I had no profes-

sion, no capital, and no job. George Peck offered to join me in a grain business, furnishing sufficient capital to build a small warehouse and purchase a corn sheller. We could use his platform wagon scales. My brother offered to rebuild his elevator engine and sold it to me for $200.00, represented by my note which he turned over to his creditors. This little engine was remarkably simple in its structure; a stiff piston connected directly with the crank of the drive shaft causing the cylinder to oscillate with the movement of the piston. It had a coal-burning upright boiler in which we used corncobs for fuel. I set up this little power plant in a shed adjoining the warehouse and connected the injector with a pump driven about ten feet into the sandy earth for my water supply. With this power plant I was able to shell about four hundred bushels of corn in ten hours at a cost of forty cents paid to the boy who shoveled cobs into the furnace, and a few cents for oil, shoveling the corn myself; and this is exactly what I did that winter.

All told I am sure I did not pay out over $40.00 during the four months of operating this little grain business. The farmers generally bought their supplies where they sold their produce. Dave Harris and Jake Levy were the two Jew merchants in Malden. Levy operated a cotton gin in connection with his business and had some facilities for handling corn. Harris was not so well equipped. We had no money and proposed to Harris that we would send our scale tickets to be paid in his store. This suited Dave

exactly as it brought the farmer into his store with a credit slip good for his purchases. We deposited our remittances with Dave which made him our banker and thus we financed the Malden Corn Company. I was a good judge of corn and rejected the poor quality which, therefore, went to my Jew competitor and I soon attained the better reputation on grain. I kept an accurate account of weights and found that we had gained enough pounds of corn bought at seventy pounds to the bushel on the cob and sold at fifty-six pounds per bushel shelled, to pay the small outlay of operation during that season. We had an advantage in transportation of corn to the planters in Arkansas because there was then no direct railroad from Kansas City toward the south and all northern shipments came through St. Louis.

During the next summer Levy proposed to furnish the necessary capital for a better organized grain business to handle the promising corn crop for that year. Thus he became our partner. The season was good and we greatly increased our business. We neglected to note that the Kansas City market was then furnished with better facilities for reaching the south and suddenly discovered that our warehouse was filled with corn for which we paid too high a price to be able to sell in competition with Kansas corn. I made a visit to our customers and learned the facts which I reported to my partners. Mr. Levy promptly made this decision. He said, "Our corn is worth only what we can

sell it for and it must be sold in order to continue buying. Our competitor is a Jew and he will not willingly sell for less than cost. We will drop the price from forty cents to twenty-five cents and he will follow our action. We will thus stop the flow of corn and we will clear up our warehouse while his warehouse is full to the rafters. We will then gradually raise the price and the farmers will soon begin delivering. We will be in active business while Harris is trying to understand what has happened to him."

We sold our corn at a loss of about $1000.00 and promptly were back in business with the satisfaction of a fair dividend at the end of the season.

During the busy part of that grain season I happened to notice that our office man in charge of the scales was giving dishonest weights by a slight under weight of the wagon and its load, and a slight over weight of the empty wagon, whereby he gave us twenty or thirty pounds advantage on each load of corn, which amounted to a clear steal of perhaps twenty-five bushels per day on busy days. When the day's business was closed and I could speak to him privately I called his attention to the matter. He hesitated, drew out his desk drawer and took a drink of liquor from his bottle, closed his desk drawer and then remarked, "A man who can't make his wages is not worth keeping, by God." That ended the conversation. Next day we had a differ-

ent scale man.

Mr. Luce was not altogether satisfied with the title to the railroad lands which he had acquired and decided to contract for purchase from New Madrid County on terms in exact compliance with the spirit of the Swamp Land Grant and all technical provisions relating to the trust reposed thereby in the County Court. For this purpose, and incidentally to enhance value, on December 1, 1885, he contracted to dredge and straighten the channel of Little River from the St. Louis, Iron Mountain & Southern Railroad to the south line of the county, for the purpose of draining the swamplands in the vicinity of Little River. The consideration was fourteen cents per cubic yard of excavation, for which he agreed to accept swamplands of the county, including the lands of the railroad franchise and other designated lands, at the price of $1.25 per acre, in full payment therefor. The proposition was entirely satisfactory to the County Court and the leading citizens of the county as well as to Mr. Luce. I was engaged by both parties to this contract at a salary of $100.00 per month and expenses and promptly began the surveys. A dredge was placed in operation in the year 1886 and continued working under my direction until June 1889 when it was destroyed by fire.

Mr. Luce died September 15, 1886. His numerous enterprises were carried with borrowed capital and his death made it necessary to place his property in the hands of a receiver,

which fact affected the operation of this important venture. In order to continue the dredging I accomplished the sale of timber on two thousand acres of the best portion of his timber tract to I. Himmelberger and Company, sawmill operators at Buffington, Missouri, for the price of $4.00 per acre. I operated the dredge in daytime only, with a small crew at low wages. When the fire occurred I had still on hand about $2,000.00 and with no other resources to proceed with the work, the operation was suspended indefinitely.

My health was somewhat impaired and having no profession and no capital I decided to accept some town-site location work in the western part of Virginia. The Virginians reasoned that their country was as well suited as any other part of the world for location of centers of industry. The climate is perfect, the country is centrally located with an abundance of the necessary elements and supplies for building of cities, and in some unexplained psychological impulse they persuaded each other to believe the hypothesis and proceeded to organize town site enterprises. These town sites were located at different points, by the energy and enthusiasm of parties interested in gaining profit by selling town lots, very much after the style of "Mulberry Sellers." I was qualified for exactly the kind of work required in platting these towns and preparing plats and maps suited to carry on the enthusiasm. I had little faith in the schemes but certainly did not know that they would fail. My work was in the vicinity of Lynch-

burg, Virginia, a city situated on the James River and built on a hillside so steep that series of steps are built in the sidewalks at the most difficult rises in some of the streets. The third story of the Court House is level with the first story of the dwellings on the next street. The country is very attractive, with old estates principally used for grazing cattle and sheep, fairly good roads, and many beautiful mountain streams.

I was engaged on one piece of town platting which occupied the entire homestead of Cyrus McCormick whose name is associated with the earliest development of mowers and reapers. This homestead was small, embracing perhaps one hundred acres located near the north fork of the James River in Rockbridge County. It was an ideal homestead. Rockbridge County contains many such old homes which do not aspire to much pretense of wealth. On the north line it was joined by the Paxton property. When I called on Colonel Paxton to confirm the accepted line between the properties, I found him in a beautiful bluegrass pasture looking over his high grade farm stock, with a son who had probably married a wealthy wife, as those young Virginians were prone to do, and was visiting the old home. The son was evidently prospering in some business remote from home, was dressed in the latest fashion, and the old gentleman was enjoying the visit.

Introducing myself I mentioned that my wife was a granddaughter of old Dr. White of Lex-

ington. He commented, "Good old Dr. White. A mighty good man--not very smart." I inferred he thought the granddaughter, also, was not very smart.

In this valley was located the new town of Buena Vista, where it was contemplated to develop several large industries, and also the town of Glasgow, near the junction of the north fork with the main river, where the promoters had developed a new town site with streets graded. The framework for buildings for iron furnaces had been erected. This town site company had for its president, Honorable Fitzhugh Lee, then Governor of Virginia. The lots sold at fair prices and resold on the reputation of the company, plus enthusiasm and energy. Many country people invested their savings. Some months later, after the boom collapsed, I passed through Glasgow on the railroad. An old gentleman and lady sitting in the seat in front of mine were much interested in the town and I saw him with tears on his face point out a row of small houses which he told her was their remaining property.

While engaged on these town site surveys I lived one year in Bedford City, an old tobacco manufacturing town with a most strenuous expansion fever. The atmosphere of urban development affected my saner judgment and I bought a corner lot with a beautiful view, situated about a half mile out on the brow of a hill. The price was $700.00. I borrowed $400.00 to make the first payment. After the transaction was closed

I became conscious of the chimerical character of the get rich quick craze and resolved to get out. I told the president of the company that I had decided to sell at a sacrifice if necessary. He could not permit such a sale and bought my lot, he said, as an investment. Many of these platted tracts were repossessed by the original owners within two years.

I followed my opportunity in this work and moved to Mount Airy, in Surry County, North Carolina, where the town site fever had developed. Mount Airy was a town of about two thousand persons, the only industries were tobacco manufacture and a granite quarry. The promotion effort here amounted to little more than extending the town streets and roads and laying out adjoining property for building sites. No special effort was made to develop new industry. I finished my work in about three months and had nothing else in prospect.

The climate along the east slope of the Blue Ridge is about perfect. The storms of the lake region are broken on the mountain ridge. The drift of rain from the Atlantic coast, which insures dependable moisture in summer, usually brings snow or sleet in winter but there is much bright sunshine weather the year round.

I made the acquaintance of John Worth, James H. Spargar, and Frank Spargar who were leading businessmen and members of the town board. The tax collector had so negligently handled his business that the town was without

money for necessary expenses. Mr. Worth invited me to accept the office of city collector and city clerk. I was perfectly qualified and had the peculiar and special advantage of not being related in any way to anyone in the town. My necessities and my independence were sufficient surety for faithful service. The board engaged me to act also as city engineer and street commissioner, and for the service in all these capacities agreed that I should have a salary of $50.00 per month provided that I should collect my salary. Under the North Carolina revenue law a tax bill is of the legal force of a judgment, as it should be in Missouri, and the collector may take possession of and sell property to satisfy a tax bill. Clearly, here was a situation in which taxes would be collected. I began with "A" on the tax list and I collected. The first man of worthwhile importance to resist was a Mr. Brower, an ex-Congressman and a businessman in the town, owning very considerable property. I immediately advertised a pair of his good mules for sale for the collection of a $17.00 tax bill. On the date set for the sale Mr. Brower locked his mules in the stable and advised me not to break the lock. Of course, the sale was not made but the issue was emphasized. I waited patiently until I learned of a carload of flour shipped to his son, who was not in business, and I had sufficient evidence that the flour belonged to the father. I seized two dray loads, placed it in the warehouse of Ed Merrit, (later my brother-in-law) under his key, and proceed-

ed to advertise. On the day of the sale Mr. Brower sent his son to inquire the amount of the bill and costs. I advised Mr. Merrit that the son would bring the money in a few minutes, and he secured an officer who attached the flour for a past due store account. This was also paid and Mr. Brower received his flour. I was able to secure enough money from the current taxes and past due delinquent bills to pay my salary for about a year and also make some little improvements in the streets of the city. At the next election this office seemed desirable to a member of one of the old families who presented himself as a candidate, was elected, and I took a job in a granite quarry at $75.00 per month.

The fertility of this thin soil was soon exhausted and "old field pine" was the reforestation. The mountain streams turned the water power grist mills and are now producing electric current. The country people were poor, dressed poorly and possibly worked poorly. Mount Airy was a market for dried blackberries. Manufactures came to North Carolina for its water power, cheap labor, and salubrious climate, and prospered. Farming was not a business, but a "manner of living" as phrased by President Hoover. Tobacco was the cash crop (generally meager) and all else was "just living" but here they had the best yams, unmatched sourwood honey, sprightly Leghorn chickens, home-cured hams, and Winesap apples not excelled in Yakima.

While I was city clerk I was selected to serve on a commission to apportion the estate of the Siamese twins, who had married sisters, located as farmers in Surry County, and died about 1890. These twins had been brought to America for the purpose of exhibition. They were joined by a short strong ligament in the side which the surgeons decided could not be severed without great danger to the lives of both. While this condition did not impair their health it did cause great inconvenience and annoyance. Their lives were not always happy. Those brothers were a little too close to each other. They had accumulated considerable money and lived in comfort.

Their death occurred from the illness of one and the prostration of the other because of his brother's death, which confirmed the opinion of surgeons regarding this unnatural formation.

They owned six hundred acres or more of hill land with a small creek running through the plantation. In this creek bottom there was a field containing about sixteen acres of which eleven or twelve acres was very good corn land. The old residence was a large one-story house with fireplace chimneys and very plain in all its appointments. The commission apportioned two hundred and eight acres of very poor hill land, on which was located the old residence, as one portion of equal value with the sixteen acre field containing the little patch of rich land with

no buildings. Some of the heirs expressed the opinion that the sixteen acre share was really the more valuable. The differences in traits of character between the two families of children were quite distinct, as is true of normal families.

The sessions of Chancery Court in Surry County were the most interesting events of the year. During the court term there were always one or two "stock trading days," on which the country people brought such farm stock as they wished to sell or exchange, and the trading went on very much as in a properly organized market. This was not only profitable but very entertaining, was looked forward to as an event and was well patronized. The business at the court was never hurried and the term usually lasted more than one week. There was no hotel at the little county seat town of Dobson and the court attendants found entertainment in homes and boardinghouses. The fare was in accord with the general living of the community and necessarily frugal. On one occasion the boiled ham had not been wholly consumed when court adjourned and the judge, with dignity, served notice on the remainder to "appear at the next term of this court and attend from day to day until said court shall adjourn."

The most important industry in Mount Airy was the quarry. It is an isolated ridge of gray granite in the foothills of the Blue Ridge Mountains. The rock is of great extent and depth and is easily quarried in very large slabs and cut

into any dimension desired. When I was working there the method of quarrying was simple. A blast hole was drilled to the desired depth and the bottom of the hole was enlarged by small discharges of dynamite until a chamber large enough to contain one hundred pounds or more of explosive had been developed. The hole was cleaned out and charged with powder and "slow" explosions split the solid rock causing a rift extending horizontally from the blast chamber. By this method a layer of granite without seams or shattering was lifted loose. The lift, perhaps two hundred feet in diameter gradually lessened in thickness from its center at the blast hole to a thin edge at the circumference where the rift came to the surface. The rifted cap or lift was then split in strips by small iron wedges set in drilled holes about six inches apart, in straight parallel lines extending entirely across the great disk. These long shafts were then broken into dimensions required in the preparation of stones for the market. I have seen a perfect parallelogram of sound clean granite larger than Cleopatra's Needle produced at this quarry. The same method of quarrying is used today except that water is forced down the original hole and the lift is split off by hydraulic pressure instead of by a blast. The ease and certainty with which this Mount Airy stone is quarried into rectangular blocks is unusual in granite. One of the most important contracts recently undertaken at this quarry was that of furnishing stone for the magnificent Memorial Bridge nearing completion at Washington.

chapter seven

BEGINNING RECLAMATION

I had followed the prospects of development in Southeast Missouri and decided in 1894 that I could again take up my work in the swamps, and moved my family back to that section in 1895. In November of that year I. Himmelberger and Company associated with the Luce interests and formed the Himmelberger-Luce Land and Lumber Company. Isaac Himmelberger of Logansport, Indiana, had established a business producing white oak staves for wine casks from timber along Castor River in Stoddard County. When transportation was made possible by the building of the railroad from Cairo to Poplar Bluff he built a sawmill at the railroad crossing of Castor River and produced a plow and wagon stock of oak, and other lumber from the ash, sweet gum, and poplar which came to the mill as "floaters" used for rafting the heavier oak logs down the river. He insisted that only the selected choice trees should be cut for logs for his mill, and his injunction was, "Remember pay day to keep it sacred, and cut only the best."

The Himmelberger firm had purchased a mill property in 1889 on which a deferred payment of $25.000.00 was arranged. The holders of this note inquired of their banker as to the financial responsibility of the firm and received the answer, "Mr. Himmelberger is good for any amount for which he will sign his name."Another nearby banker publicly stated that he considered it a disgrace for any man to sue Mr. Himmelberger.

A contract was made with James M. Pollard of Maniteau, Illinois, to finish the work begun by Mr. Luce in 1886 for the channel for Little River and I was placed in charge. This contract was drawn in the summer of 1896 and required payment in gold to secure which bonds of the company for $100,000.00, principal and interest payable in gold, were issued.

The Free Silver Movement had attained some force, with Dick Bland of Missouri in the House of Representatives and Senator Teller of Nevada in the Senate. The demand for two standards for the American dollar at the rate of "sixteen to one" was eloquently advocated by William J. Bryan who was then a Congressman from Nebraska. He was termed the "Boy Orator of the Platte" and some wag explained that the Platte River is a mile wide and six inches deep. The free silver campaign was a remarkable enthusiasm of the American people. It was assumed that silver was just as good metal for making dollars as was gold and that it would answer the same purpose, requiring only the

stamp of the mint to make it worth as much as gold at the ratio of "16 to 1."

The honest "16 to 1" advocates did not understand that a standard of value in a currency can only be expressed by a definite quantity of a designated commodity. All commodities are subject to varying relative commercial values and, therefore, the standard must be confined to one only. Silver may be less variable than gold in the feature of relative value and might serve quite as well, with gold discarded, but there cannot be two value standards, or weight standards, or linear standards, or any other standards, including the virtues. The dollar of United States money is 23.22 grains of fine gold, and 23.22 grains of fine gold is the dollar whether it is minted and stamped or not. The arguments advanced by Mr. Harvey in his book Coin differed from those advanced to support "fiat" money during the "greenback" issues soon after the Civil War, since the silver dollar would have an intrinsic value. There had been a limited issue of currency payable in silver; of these Bob Ingersol afterward said, as he held up a bright silver disc stamped 'One Dollar U. S. A.' "My sins are forgiven; I know my redeemer liveth."

The country had just passed through the business depression during the second term of staunch Grover Cleveland and, although his second election was carried in defiance of the free silver propaganda, the country was not yet free of the vain hope that cheaper dollars would bring better times.

I was then living at Fredericktown, Missouri. I realized that the free silver enthusiasm might carry the election. I was sure that Mr. Bryan could not possibly establish the sixteen to one dollar, should he be elected president; but I could not estimate what disaster might occur from his efforts to do so. I attended the Gold Standard convention of Cleveland "mug wump" Democrats at St. Louis, which endorsed the gold standard ticker of Palmer and Buckner as a means of dividing the Democratic vote. That convention was composed only of interested citizens, not politicians, who met for the purpose of drawing from the Democratic party whatever votes might be induced to follow. McKinley was an amiable, politician-lawyer of the manufacturing city of Canton, Ohio, whom the fortune of politics had made chairman of a committee of Congress which had presented a tariff bill acceptable to the Republican leaders. It was another instance in our system of party rule when the representative of the party in no wise represented the political issue.

I was the only Democrat in the Thirteenth Congressional District who was sufficiently resolute and independent to attend that convention. I took possession of two rows of seats assigned to the thirteenth delegation and, of course, was made a member of every committee. This attracted the attention of the reporter for the St. Louis Globe-Democrat. Mr. Louis Krauthoff, one of our Periclean Club, recognized me and gave my name to the reporter. The Globe-Democrat's account of the convention described

my activity in the first paragraph in the report of the convention. My brother at Carthage, Missouri wrote me a very severe letter demeaning me for joining the Plutocrats. My younger brother, holding a stenographer's job with the Democratic Missouri Supreme Court, wrote me a letter in which he wailed, "Otto! What are you doing for me?"

Mr. C. D. Matthews, a banker at Sikeston, Missouri, was a Republican and a man of excellent information and understanding in business matters. He had become concerned about the progress of the Bryan campaign and had given notice to his borrowers demanding payment of their past due loan but indicated he would be willing to loan reasonable amounts on notes, payable principal and interest in the present standard gold dollar. I happened to be a borrower for the purchase of a farm worth about $5,000.00 at that time. He notified me with the others. I told him that I was quite willing to pay him in dollars of the same value as those which I had borrowed and he readily offered to prepare a new note and mortgage. On the date on which I had agreed to sign I was unable to reach his office and therefore advised him by special message that I could come in the next week. During that week I received a letter from him enclosing the following note and a mortgage, in which he said it seemed that McKinley would be elected and since we understood each other perfectly he would not at present insist on rewriting the loan:

$1735.00 Sikeston, Mo., September 7th, 1896.

One year ---- ---- after date I promise to pay to the order of CHAS.D.MATTHEWS, at the Bank of Sikeston, Seventeen Hundred and thirty--five-Dollars, in Gold coin of its present standard of weight and fineness, for value received, with interest from Maturity at the rate of eight per cent, per annum, and if the interest be not paid annually, to become as principal and bear the same rate of interest--both interest and principal payable in gold coin.

He had some interest at stake in the change of the loan which could only be rewritten legally at eight per cent. This gold note was not executed and two months after McKinley's election I borrowed the money elsewhere as my original note was bearing ten per cent. He rented his money to approved customers as he rented his farms to approved tenants and followed up each venture to assure that he should receive his stipulated income. Mr. Matthews was a practical lender of money. He was an excellent judge of securities and business ventures, he charged all the traffic would bear, carefully watched his loans, and required prompt interest payment. He wished, and often insisted, that his patrons should conduct their business properly and build up reserve. He saved me a loss when he advised me not to make an investment for which he offered to loan me the necessary funds. I do not believe he ever demanded the principal un-

less some untoward circumstance impaired the merit of the risk.

RECLAMATION

The Pollard Contract was completed in the spring of 1899 and the adjustment of the terms of Mr. Luce's contract with the county was concluded that summer. The settlement with New Madrid County involved dealing with squatter claims, which had been anticipated. The contract provided that occupants of homes should have the option to purchase not to exceed eighty acres each, at the price of $1.25 per acre, payable to Mr. Luce on his contract account. It was part of my duty to locate these homes and gather data as to the legitimate claim of the residents at the time the option should be exercised. I advised that the Land and Lumber Company should purchase these claims wherever possible, against opening the way for trading and/or speculating on these selected tracts, which I believed would soon develop value, but it was decided to make no move of that sort.

Claims were held to the extent of perhaps two thousand acres, in tracts of forty to eighty acres. There was little contention and generally fair propositions by the squatters. The court required each squatter to deposit the money at the time of adjusting his claim. Mr. John Himmelberger, the son of Isaac Himmelberger, personally represented the company and I attended all of the court meetings, furnishing information for both Mr. Himmelberger and the Court. The

adjustments were perfectly amicable, and friendly relations generally followed.

Mr. Himmelberger was most fair and liberal and in one instance, where the small son of a widow presented her claim but had no money with which to make the deposit, he waived that requirement and asked the court to proceed to determine the rights, which was done and she was granted the privilege of paying the $50.00 later. It was probably never demanded. It is very pleasant to record the interesting fact that during all the twenty-three years in which this land title was being developed every court in New Madrid County maintained a fair and friendly relation to the promoters, which always indicated that the general public approved.

In the record of New Madrid County Court dated May 25, 1899, there is this entry:

> "In the Matter of Drainage Contracts of C. L. Luce and others.
>
> "This day came on for further consideration the matter of the contracts with Charles L. Luce and others, and the Himmelberger-Luce Land & Lumber Company for the dredging, straightening and removal of obstructions from Little River and its tributaries, and the court having considered the report heretofore filed by Lee C. Phillips, F. R. Yount, and Lee Hunter, Commissioners heretofore appointed to superintend said work, and the reports

and estimates of Otto Kochtitzky the engineer in charge of the entire work, does now find that the work provided for by said contracts has been in all respects completed, and the same is hereby approved and accepted.

"And the court further finds that the contract price for the work so done as required by said contracts amounts at the rate and upon the basis of fourteen cents per cubic yard to $267,114.18 which amount is payable to the Himmelberger-Luce Land and Lumber Company or its assigns in swamp or overflowed lands at and for the price of $1.25 per acre, in the manner provided in said contracts.

"It is therefore ordered that patents or deeds be issued for such lands as the parties may be entitled to under said contracts."

New Madrid County transferred a perfect title to about 150,000 acres of land under the Luce contract. All of this land except about 20,000 acres was covered with medium growth red gum, oak, elm, and ash timber of the quality and variety produced on wet land. There were about 5,000 acres of open overflow lands on some of which there grew only flag and smartweed and the remainder was covered with scattering growth of willows, small ash, and cypress.

The new channel for Little River was not

sufficient to reduce the overflow to any great extent during the very wet portion of the year but it drained the water out of the basin area in the summer season and changed the vegetable growth on the open land. The flag patches disappeared and within two years the growth of smartweed became very luxuriant. Some portions produced other growths but the seasonal overflows prevented development of pasture grasses. The removal of the water seemed to benefit the growth of all varieties of forest trees. Cypress and willow growth is not dependent upon water condition but these trees do grow on wet land where other trees do not thrive and overgrow and crowd them out.

There was little present value in the timber as there were no transportation facilities for lumbering except at a few points and, therefore, more than half the acreage of Southeast Missouri was considered of no value. At no time would the property owners of any county have approved any general proposition for reclamation at public expense. Small tracts could not be improved independently as the swamp land is so flat and devoid of outlet channels that it was practically impossible to provide drainage by local ditches. Less than five per cent of the land could be used and therefore little of it could be sold except for timber value. The development waited upon the energetic effort of venturesome promoters who must be encouraged by whatever the counties would give. The greater portion of these lands were donated to support road and railroad franchises. They constituted

about half the area of each of six counties and one-fourth of the area of three other counties. There had been a large grant by Butler, Stoddard, and Scott counties to the Cairo and Fulton Railroad Company in support of building a railroad from Cairo, Illinois, to the Southwest, which land was later acquired by Pierre Chouteau and other of St. Louis. Pemiscot County made a grant of about 40,000 acres to Louis Houck in support of his railroad enterprise in that county.

My father's interest and effort began in 1875. Twenty-five years elapsed before anything was accomplished to develop land values. The improvement of Little River channel demonstrated the benefit of ditching and immediately started the effort of draining large separate areas. The Himmelberger-Luce Land and Lumber Company, together with a few enthusiastic parties who had been buying swampland at tax sales, organized the first drainage enterprise, located in the northern part of New Madrid County and designated Otter Slough Drainage District No.1. We operated under an old statute copied from Indiana laws and suited for construction of ditches by hand or with teams. This statute required that each landowner should assume the construction of his portion of the ditch. This was impracticable in our case and we, therefore, planned that each one who would do so, should engage to do his portion as described by the statute; and that I should represent the promoters and in that capacity should engage to construct all of the work taxable to landowners who could not or would not undertake to do their individual

parts. This was a venture of such character as would appeal only to men who were sure of their mutual dependence and had no hesitation as to the success of the undertaking. We concluded our organization, established the drainage district by court orders of record, and assigned our contracts to Mr. A. D. Brown of Washington, Indiana, who accepted payment in bonds of the district.

The organization of this drainage district attracted attention in other parts of Southeast Missouri and gave me experiences with this cumbersome and impractical law and suggestions for amending it to make it better suited to the modern methods of ditch construction, especially the work as it must be done in Southeast Missouri. The Otter Slough venture organized under this law depended too largely on mutual cooperation of the landowners, which is seldom possible. This was a weakness in a statute which requires that some parties must be taxed unwillingly for public benefit. The common law of England, on which our statutes are based requires that the construction of a public improvement, chargeable against the property shall embrace all of the lands affected thereby. Also that no benefit improvement may be organized in which the cost will be greater than the benefit. We had to have a law which would cover these points. I arranged several landowners meetings in the nearby towns and with the support and suggestions of capable lawyers I prepared the draft of a bill to be pre-

sented to the Legislature in 1899, which repealed the greater portion of the old law and enacted another drainage law. It is Chapter 122 of Article 4 which has remained, with little change, the practical and popular method of organizing public drainage districts.

Under this law the county court is authorized to organize reclamation districts upon a petition of five or more landowners, when the proposed improvement is conducive to public health, convenience, or welfare, or will be of public utility or benefit.

The court appoints a commission of three disinterested freeholders as viewers and a competent engineer to examine the undertaking, report on its necessity and practicability, and describe its character and extent. On receipt of this report the court determines whether or not the improvement shall be constructed.

If the petition is rejected the cost advanced by the court is collected from the petitioners. If it is approved the court appoints a second board of viewers to proceed with the engineer to locate and specify the work required and make an estimate of the cost. They also prepare an estimate of benefits or damages to property affected by the contemplated improvement and make a full report of all facts necessary to advise the court regarding the work.

The court then sets a day for hearing complaints or objections to the undertaking and to the estimate of benefits and damages, and approves

or modifies and then confirms the report of the viewers. A contract is then let for the construction of the improvement. The court may issue bonds of the drainage district in sufficient amount to cover the total expense with a reasonable margin for the cost of inspecting the work and for emergencies. The county clerk is then directed by the court to prepare an assessment book in which is set out the cost of said improvement as charged against each tract of land of forty acres or less, in pro rata to the estimate of benefits on the land and the annual installment to be collected against each tract to pay bonded indebtedness as it matures, according to the terms of the bonds.

By this law each tract of land is definitely assessed for its proportional part of the cost and is liable for that amount only, in support of the bond issue. This feature of the law is not satisfactory because it is impossible for an engineer accurately to determine the true relative benefit on each small tract of land and this has resulted in an unfair apportionment of the costs. This fact was recognized but there seemed no possible way to insure against such errors because every landowner insisted that the charge against his land should be specifically set out and that he should not be responsible for more than specified.

The drainage districts organized at this time were chiefly located in sections where the land was not much subject to headwater flood-

ing and where the extended ditch would reach very low land or natural outlet. In several instances the modified movement of the swamp water increased the overflow condition at the outlet point and by extending the period of duration of overflow caused the destruction of the timber growth. It generally occurred that the drainage was efficient only on the upper section of the ditch. The statute provided that a "competent" engineer should be employed, but in fact all of these engineers were inexperienced and poorly qualified by education. It was all new work and we understood that we were doing little more than pioneer effort and realized that the ditches would require reconstruction within a few years. We were restricted in expense to the limit of cost which could be covered by a bond issue which the enterprise would support. We believed that a second bond issue for the purpose of reconstructing and enlarging the ditches would be more practical after the first ten years of development had been accomplished, and that we would then be able to "guess" more accurately regarding the proper dimensions of the ditches. On one occasion I explained this feature to an audience in Kansas City. I referred to the fact that the word "guess" used in the northern portion of our country was a synonym of the word "reckon" used in the South, and that the explanation is that the Northerner will guess as nearly as a Southerner will reckon. I had served a drainage district in the Chariton River bottom where I had disapproved the ditch which Commissioners insisted I should locate. When I retired from the platform a lady beckoned me

to sit beside her. She owned land in that drainage district and she wanted to say to me that she "reckoned" I "guessed" on that job.

There are many instances of drainage districts overlapping each other because of organizing adjacent territory and developing a more satisfactory outlet. Therefore it follows that a drainage district is not a geographic part of the county or state, but is constituted of the lands affected and taxed for such purpose.

The reclamation work in Southeast Missouri was all in overflowed land covered with heavy forest. This reclamation was pioneering wherein the anticipated result must inspire confidence that it was economically sound in order to have the support of landowners and bond dealers. There was no one with experience and prestige to lead or caution which resulted in planning ditches which all understood might need enlarging later. The subsequent correction work often required organization of new districts covering the same or additional territory and second assessments were made against the lands by the same system of benefits and damages. The courts recognized the theory of "benefits obtained" and declared the second organization to be of the same force as the first, further indicating that a drainage district is not a geographic district.

The surveyors waded in soft land covered with branches fallen from the trees, stiff cane growth and briars or trailing vines on the fairly dry land and tangled swamp grasses, weeds,

flags, or brush in the very wet sloughs. This was hard work and made doubly so by the long walks from and to the few lodging places in the swamp. I recall that on Ash Slough Ditch location I was so weary with stumbling through mud and brush in heavy rubber boots on a warm day in spring that I resolved, "This is worth a dollar a step and I mean to have it."

In my work in New Madrid County I generally accepted nature's evidence for the proper ditch locations, followed the depressions and in some instances depended upon water surface as a safe guide in setting a grade for a ditch.

I was in doubt regarding the proper size of ditch for the Ash Slough section of the Otter Slough Drainage District and suggested to the principal landowners that I would like to have the opinion of a drainage engineer who was recommended to us. The required ditch would be about ten miles long and, with its laterals, should afford drainage for 13,000 acres of lowland west of Sikeston Ridge, with no headwater overflow. His report recommended a ditch be dug two feet wide on the bottom, five feet deep with a one to one slope on the sides, making it about twelve or thirteen feet wide on top. We accepted this suggestion and the records show that the court approved this ditch. Before we offered the work for contract I insisted that this ditch would not be efficient and we required the contractor to construct it with a dredge, which was the only practical way to do it, and would result in a ditch not less than eighteen feet wide on top and

twelve feet wide at the bottom, five feet deep. He received pay at thirteen cents per cubic yard estimated on the yardage of the original two feet bottom ditch, a losing contract to him. The landowners realized that this ditch would not serve and within five years they were in court with a special drainage district providing that the ditch should be made twenty-five feet wide on top and ten deep. As the development of this fine land progressed, the owners again appeared in court within another five years and then asked for a ditch fifty feet wide on top and eleven feet deep, which they willingly paid for.

The Ash Slough ditch was located about one mile from the edge of Sikeston Ridge, where the seepage from that sandy ridge affected the lowland. I had planned small ditches along each section extending from this seepage slough to the main ditch which afforded relief for only very small areas at the head of each of these ditches. We soon realized that it was necessary to construct a ditch parallel with Sikeston Ridge and about two hundred feet away to relieve this seepage condition. Educating engineers in the field is a very expensive school. In this instance experience decided we needed fourteen times as much excavation as the consulting engineer suggested and seven times as much as I "guessed" it should be.

chapter eight

LAND TRADES

I had now established my permanent home at Cape Girardeau, a town beautifully located on a bluff overlooking the river. Cape Girardeau County was settled and developed by Germans, although the early town was French. There were forty-two hundred fifty people, and the town had twenty-six saloons. The German community liked its beer. Nearly all of the saloons were fairly well conducted but there were a few, naturally, which were bad. The Southeast Missouri Normal School was attracting attention and gathering pupils from all parts of Southeast Missouri and from St. Louis. It occasionally had trouble with the saloons. The town was gradually acquiring a population of new people interested in business in this section of the state, and a little circle of my personal friends began a movement against the excessive number of saloons. This movement was not radical but was a steady pressure by the new citizenry supported reasonably by part of the German population. By the Missouri statute, the law required that a saloon license was granted only

upon petition of the majority of the tax-paying citizens owning property in the city block in which the saloon was proposed to be established. We endeavored to persuade property owners not to sign petitions for saloons in residence blocks, and opposed issuing of license to saloonkeepers in business blocks who were not conducting their business strictly according to law. The movement was at first against only the worst saloons which most of the citizens appreciated were unfit and we soon suppressed six of them. The liquor business had become interested in election of public officials in order to protect itself against unfair taxation and regulation. After the movement to reduce the saloons had gained some force it developed that the "wets" had a majority of about two to one against the "drys." We then had a town council composed of five saloonkeepers and one independent, and the Mayor was president of the brewery. I wish to state that while the town was rather "wet" the administration of public affairs was clean and fairly good. Saloon license was kept down to or below $300.00 per year.

When our activities became evident the friends of the saloons began a defense which threatened a boycott against the business and professional men engaged in the movement. My business was wholly outside of the city and I could not be influenced by such retaliation tactics, which fact naturally placed me somewhat in the front of the movement. The courts were elective and reluctant to interpret the law too rigidly. There was a petition for a saloon in the block in which I had my residence. The pe-

titioner could secure a majority in a portion of this block, but could not secure a majority for the entire block. When the matter came before the court he endeavored to establish the boundary of the small city block by a city plan suggested by a very old survey but not followed in the later platting of the city. I showed that the pretended block in which the majority was obtained was not the actual block, but the Presiding Judge of the County Court had conducted a saloon in the county seat for many years and was willing to accept any decent excuse which would authorize the granting of the license and the petition was allowed. The St. Louis Court of Appeals later affirmed this decision upon the logical (!) conclusion that as the lower court acted knowingly it did not act corruptly.

In 1918 when Missouri adopted prohibition, our persistent effort had reduced the number of saloons to thirteen, while the population had increased to eighty-two hundred. My activity attracted the attention of the State Board of Anti-Saloon League of Missouri and I was made a member of that board. With the notice of my election there was an inquiry as to what church I was to be accredited.

The pulpit has always been the forum available for the Anti-Saloon League. It has prestige, it is in accord with the purpose of the League, and it is offered without charge. The League committees are largely composed of ministers; all of the Missouri State Superintendents and I believe all of the District Superintendents have been preachers. Their meetings are con-

ducted like church functions, opened and closed with prayer, and a preacher presides. All of these men were educated in schools which taught revealed truth. They were not to question or to doubt. To them there was the one view "Thou shalt" or "Thou shalt not." Their paths had been easy to follow, their footsteps guided by "Thus saith the Lord." Their office of minister precluded any thought of doubt or compromise on the saloon question. They all heartily agreed with National Superintendent F. Scott McBride that "Anti--Saloon League was born of God." These men could not be tolerant. To them prohibition was the only answer. As for myself, I was never sure that prohibition was the right solution of the liquor question. "Anti - Saloon" was as far as I could go with assurance. Temperance certainly is a "consummation devoutly to be wished." In our Cape Girardeau campaigns we were endeavoring to mitigate the evil of the open saloon and appealed directly to our neighbors to stand for a better order of living.

My friend Jack Matthews, who owned some land in a drainage district where it was necessary to enlarge the main ditch, persuaded me to help him secure a contractor to do this work at a reasonable price. I did not want the contract but I bid the price down to what I thought was fair. The only competitor proved to be an undesirable contractor and I allowed the parties to persuade me to undertake the work at my bid. Mr. Pollard sold me an old dredge at a very low price, all on deferred payments. I secured William Crumpecker for a partner and we proceeded to do the work. The dredge was supplied

with an old-style single cylinder engine and a heavy balance wheel. This engine was troublesome to start and our operator would turn down the steam supply to keep it running while he lit his pipe. This seemed to suggest to the boys that work should go on, which reduced the item of lost time and thus accomplished the work at a very satisfactory price.

Jack had agreed to endorse my note for funds for construction and operation until the ditch bonds could be sold. The bond issue amounted to $55,000.00. I attended the bond sale and there being no buyer present I proceeded to bid under an agreement prepared by me, whereby I should pay $1500.00 in cash which covered the organization expense advanced by the county court, and a very small amount on the bonds; stipulating that the bonds with coupons attached should be held in escrow to be delivered to me in such installments and at such time as I provided money sufficient to carry forward the work. This gave me the ownership of the bonds and entitled me to the interest on the entire issue. I promptly advised Jack of the deal and he seemed a little jarred by the evidence that he was paying interest on bonds which were not paid for--he was the largest landowner in the district--but I convinced him that it would make no difference to him whether the interest was paid to me or to some other bondholder. A few months later I sold the issue to a regular dealer and gave him the earned interest at date of sale as profit on the bond purchase.

This first contracting venture was profit-

able, and before finishing the job I bid on a larger contract in the same county for which it was necessary to build a second dredge. So I bought a larger new machine on installment payments and I found my credit was sufficient to enable me to borrow at a bank for installing the machine on the job. It happened that the date advertised for sale of the bonds for this drainage district, amounting to $180,000.00, occurred during a very wet period and the entire district was overflowed so badly that the representatives of the bond houses would not bid because of the unpromising appearance of the country. One of the bond buyers suggested that the court would approve a sale to me by the same plan of bid as my former purchase and suggested that he would furnish me a check for the required bidder's deposit, which I could use in making the bid. I proceeded to buy the entire issue on exactly the same plan, except that I did not advance any cash. About two months later a local lawyer, who was interested indirectly in some of the land, complained to me that we were not making progress. I insisted that he should attend court with me and adjust the complaint. The court very pleasantly waived the complaint and advised that I proceed with my effort. This little incident emphasized the necessity of giving prompt attention to the sale of the bonds.

A number of friends had joined me in the purchase of ten thousand acres of land from the Himmelberger - Harrison Lumber Company on deferred payments. I had organized the drain-

age district to promote the development of this land. The Southeast Missouri Trust Company with $500,000.00 cash capital had just been organized in my home town. Several members of the Board of Directors were interested with me in the land. Mr. W. H. Harrison, who had sold us the land was a member of the board. He approved the purchase of these bonds and the board readily agreed to take them at par with accrued interest. I had described to Mr. Harrison that a small percent of the issue would be needed during the first year, only about one-half during the second year of construction, allowing a very handsome income by the interest upon the entire issue during that period. In my careless way I neglected to note the exact date of the issue. I represented that the interest period began one-fourth year earlier than was stated on the bonds, the difference amounting to $2700.00. I decided that I was responsible for this amount by my sale contract and was able to persuade the President of the Trust Company one bright spring morning to accept me for three-fourths of the amount and hold another contractor, with whom he frequently played poker, for the other fourth. I am sure he never collected that portion and while I was curious to know, I felt it unwise to inquire.

We were now at the beginning of a land trading era inspired by the prospect (we believed a certainty) of enhancing values resulting from reclamation of a large area of very fer-

tile land, situated at the center of the country, in a temperate zone with good rainfall, with the markets ready for its present forest wealth and its later assured agricultural products. Similar reclamation had been accomplished in the states immediately east of us and those landowners were disposed to invest accumulated profits in other cheaper potential farm lands. Mr. Houck was building his railroads through the forest, giving value to the timber, and a lumber business was developing which would harvest profits during the few years required for the reclamation work.

Contagious enthusiasm and demonstration inspired a few venturesome spirits in each county to follow our lead in New Madrid and organize drainage districts, and the boom developed. Little cash capital was needed to buy the swampland, which had been selling for taxes levied on very low valuations.

I was intimately familiar with the geography of the west half of New Madrid County, about 250,000 acres. I prepared a map showing the location of the low flat ridges on which squatters had opened very small farms where they produced a little corn for their horses and just a little for the stock hogs running in the forest feeding on acorns and crayfish. My map indicated the location of the better timber tracts and I had estimated the quantity on portions of it. I had no capital and, therefore, approached Jack Matthews to furnish it, for a land-trading

partnership in tax title purchases. I was free to entertain propositions from others and to deal independently. My profits in the tax titles during the trading or boom period amounted to about $60,000.00 and in other trades and deals to fully as much more, besides thirteen hundred acres of excellent land which I could have sold for $50.00 per acre but decided to develop for farms, nine hundred acres of which I still own. I was not selfish or grasping in the land deals and often helped others with advice or caution regarding propositions. While we believed we were dealing with merit values, the business had about the same degree or character of gambling as deals in stocks and we were as much gamblers. I had many interesting experiences.

My first venture embraced sixteen hundred acres of timberland, subject to overflow by the Mississippi River, bought with Jack Matthews and Joseph Hunter for fifty cents per acre, and sold through an agent for $1.75 per acre, of which the agent received seventy-five cents per acre commission. I went out with the agent's guide who showed the property. There was one small grove of very large red oak trees near the center of the tract. When we rode into this exhibit the third time our "prospect" called, "Hey, Harper, wait a minute until I find a lead pencil I dropped here this morning."

In organizing Drainage District No. 7, a landowner objected to $5.00 per acre cost on his eight hundred acre tract of boggy swamp. I found a partner, bought his tract at $3.00 per acre, (two-thirds of which was profit to seller)

sold the timber within two months for $5.00 per acre (over several glasses of good beer at the "Last Chance" Saloon) and made this notation in my land book: "This land will advance $5.00 per acre each year for twenty years." My partner sold at $80.00 per acre in the sixteenth year.

Mr. Sarff owned a section adjoining the sawmill town of Gideon. He had sold the timber, cleared a hundred acres, and built a house and barn. He wanted to sell for $6,000.00. I had no ready money and tried to find him a purchaser. A few weeks later I made a sale of other land and meeting him I offered him $10.00 per acre, in my eagerness to trade, which was $400.00 more than his price, and bought the tract. I donated a seven acre oak grove adjoining town to the public school, sold a quarter section embracing the cleared land back to Mr. Sarff for $3500.00 and all the remainder at $20.00 per acre, which was too cheap. This deal seemed to cool the friendship of Mr. Sarff.

New Madrid County still owned eight hundred acres of good land and offered it at $1.25 per acre. I suggested to my partners that we buy it. They hesitated until Mr. C. D. Matthews bought half of it which lay alongside land he was developing. The value was then demonstrated to them and we rushed in to grasp the remainder. After the event, the sad fact dawned on my slow-thinking intelligence that I could have secured the whole eight hundred acres at any time, without using cash, as the proceeds were required

by law to be set aside and loaned as part of the general school fund. We sold our four hundred acres within a year or two, at $10.00 per acre to Lee Hunter, who soon sold it, undeveloped, for $30.00 per acre, whereby it appears that I had inexcusably overlooked a net $20,000.00.

Perhaps the deal which I made with Mr. W. H. Harrison, my employer, was altogether the most gratifying. The heirs of Mr. A. M. Shead offered to sell fifteen hundred acres of excellent land with good timber for $7500.00 cash. I could not then raise the cash and described the property to Mr. Harrison. He offered them $6000.00 and got the land. His timber cruiser reported adversely because there was not much good oak and Mr. Harrison complained that I had led him into a poor investment. I had a friend with money who had asked me to put him "next" on a land deal and who knew the property. I wrote him to be ready with $1000.00 as I was sure Mr. Harrison would accept that amount as a profit. When Mr. Harrison again complained about his hasty trade, I offered him the $1000.00 provided he would give me two years to pay the $6000.00. We sold within the two years for $25,000.00, of which $8500.00 was my net profit without one cent invested.

In this transaction I had advised Mr. Shead not to sell at his price, I had advised Mr. Harrison to buy, and demonstrated the honesty of my advice by taking the property when Mr. Harrison was dissatisfied with his purchase.

The history of one land deal, which came under my notice, makes a very interesting story. A tract of ten thousand acres was held by a non-resident owner who was not well informed of the activity in this section and who was desirous of unloading an unprofitable investment. A local agent undertook to sell this property under a very liberal contract. He proceeded to organize a drainage district and advertised for a purchaser, who proved to be a widow with $50,000.00. He arranged with a farmer living near the property, and who was familiar with it as a cattle range, to ride over the land with the lady and show it to her during the dry season. He also talked with a sawmill operator in the vicinity, who expressed a good opinion of the property and who readily agreed to say as much to his client. The selling effort carried through nicely and the purchase was made. The farmer became owner of a section of land worth about $2000.00 which I am sure he would not have bought. Very soon after the sale I happened to be present when the mill operator opened his mail and commented that the $500.00 he received by pink check, which he described as "warm", was compensation for his service. About three months later the lady arrived for the purpose of locating a sawmill which she had purchased for manufacture of the timber and called a friend of mine who was surveyer for the county in which the land was located, asking him to meet her and locate a mill site. He asked her to come over to his office that evening to consider the matter. To reach his office she must cross her

lands on the railroad. On entering his office her first words were, "Mr. Randolph, was I crossing my land today on the railroad?"

"Yes, Madam."

"Is my land all under water, Mr. Randolph?"

"Yes, Madam, but you need not be discouraged as the lands will be drained and you have a good investment. You must not think of cutting your timber under present conditions, but sell your mill and wait a few years with confidence that the investment is all right."

About two years later I met the bookkeeper for the mill operator who asked me regarding the timber on that tract of land, and a few weeks later I noticed that this mill operator had purchased the entire tract. The purchase price was given as $150,000.00.

DIGGING THE MAIN DITCH

Ditch No. 1 of the Little River Drainage District, 140 feet wide, was excavated by first digging one half the width, then returning with the dredge to complete the other half.

chapter nine

LITTLE RIVER DRAINAGE DISTRICT

The Little River Swamp is the level depression or trough lying between Sikeston Ridge and Crowley's Ridge, or St. Francis Terrace, in which the accumulated water from many separate drainage districts and the runoff from the hill sections adjoining flowed southward into Big Lake Swamp in Arkansas. This valley in Missouri is eighty miles long and from twelve to twenty-five miles wide. A black curly moss growing in bunches on the ground gives the name Niggerwool Swamp to a section of it in Stoddard County. The erroneously designated "Sunk Land" in New Madrid County is also embraced. By 1905 about one-half of it was partially reclaimed and taxed for the construction of the earlier organized drainage districts. The land had been acquired mostly in large blocks and the organization of an effort for reclamation depended upon a few large holders. I had been employed by the Himmelberger-Luce Company in charge of 180,000 acres in New Madrid and Stoddard counties, located about the middle of this valley

and I was intimately associated with most of the other principal landowners.

Throughout many years I endeavored to promote the organization of this entire area into a single drainage district, as this seemed the only feasible plan of procedure. We agreed that it was practicable, but there was no progress toward organization. In 1902 I gave up my engagement with the Himmelberger-Luce Company, now the Himmelberger-Harrison Lumber Company, and devoted myself to land dealing and drainage engineering in this section. I needed a good map of the lowlands of Southeast Missouri and proceeded to compile such a map embracing seven counties. I visited each county and added much information as to roads, railroads, ditches, and topography which did not appear upon any other map at that date, so that my map of the lowland area contained a better map of each county than any of these counties had ever secured. On this map I indicated by topographic symbols the central swamp extending the entire length of the Little River Valley. I printed a thousand copies of this map and sold them at a very small price, and frequently distributed them without any charge. It was used by land dealers who constantly talked the proposition of organizing the Little River Drainage District. This map actually brought about that organization at that time, as all interested parties saw the problem alike, and within one year of its issue there had developed so strong a sentiment for proceeding with this enterprise

that Attorneys R. B. Oliver of Cape Girardeau and J. M. Blazer of Chicago were employed to prepare a draft of a corporation statute under which the construction and maintenance of the work might be organized and financed. When the necessary petition of landowners representing more than one-half of the ownership was prepared for proceeding in court, I insisted upon having my name first, and there it is.

The plan of procedure under this law was similar to that of the earlier ditch law, but the organization was in the Circuit Court and the administration was conducted by a board of five supervisors elected by the landowners. On this board Mr. John H. Himmelberger represented the land investment of the Himmelberger-Harrison Lumber Company, amounting to about 180,000 acres, mostly acquired for the timber which his company was manufacturing at Morehouse in New Madrid County. Mr. A. L. Harty was interested in lands in Stoddard County and agent in charge of other land interests in that section. Mr. A. J. Matthews was a very active, energetic landowner engaged in developing farms in Scott and New Madrid counties as well as trading in the cheap timber lands of that district.

Mr. S. P. Reynolds, a civil engineer, was employed as a land surveyor and levee engineer in Pemiscot County and interested in land and timber in his section. He represented the Wisconsin Lumber Company in this drainage organization. Mr. Charles Henderson was a businessman residing in Cape Girardeau County and

had interest in land within the drainage district.

The Board of Supervisors was organized with J. H. Himmelberger as president. The members were elected for one to five year periods. These men were re-elected for five-year terms and there was no change in the personnel of the board until Mr. Henderson retired in 1923. Then Mr. W. P. Anderson, of the firm of Gideon-Anderson operating sawmills at Gideon, Missouri, was elected to his place. No further change of the membership occurred until the death of Mr. Himmelberger in December 1930.

Mr. Himmelberger was at all times the dominant member of the board because of his large holdings. He fully appreciated the responsibility of his position and at no time did he hesitate to assume his part with the other members of the board in all matters pertaining to the organization and execution of the drainage enterprise. His reputation for careful and upright dealing gave him a commercial standing of the very highest rank. The prestige of his name and his personal characteristics made him president of the board against his wishes.

East member of the board was busy with his own affairs and there was lacking the intimate personal study and direction of the problems of this great undertaking which might have been gained by an active general manager. Such office should have been provided by law.

I was requested to serve on this board but

refused. Instead I offered to serve as the engineer in charge of surveys and until the plan for drainage should be adopted which seemed satisfactory to all parties and I was so selected. I had become engaged in contracting construction of ditches and was not disposed to give up my business and accepted the office of chief engineer with the reservation that I might retire when the plan for drainage was worked out and approved. I have always regretted that I made this decision. Every enterprise is best served by one mind. While I was not a trained engineer I had familiarized myself with this enterprise and I had a talent for bringing men together into a united effort, and adjusting differences, which was exactly what was needed in this work. I should have dropped my business, and should have given all of my time, energy, and ability to the service of this one great undertaking. It proved to be pioneer work in the Mississippi Valley of such public interest as to be worthy and worthwhile as a life work.

The building and maintaining of the levee of the State of Mississippi, extending along the river below Memphis nearly to Vicksburg, protecting the fertile lands of the Yazoo Basin from overflow by the Mississippi River, was begun and carried out by Major A. J. Dabney. He made it his life work. He lived with his job, gave it undivided allegiance and was rightfully accredited the support and respect of that great section of the state. In a speech at Memphis, after a flood in the Mississippi River which destroyed

many of the levees, Pres. Roosevelt said of Mr. Dabney that when he was asked if he thought his levee would withstand the menace he answered, "I have been getting ready for this flood for thirty years." Such devotion to service was needed in this Little River Drainage enterprise.

In 1893 the State of Missouri appointed a commission composed of one member from each of the swampland counties to make a topographic survey of the lowlands of Southeast Missouri. Mr. N. C. Frissell of Cape Girardeau was selected by this commission to be the engineer for the survey. He prepared a very accurate map with profiles of cross-sections on the state line and on each township line running east and west. This map gave assurance that the reclamation was practicable and suggested the plan for the survey which was needed for the work of the Little River Drainage District. Mr. Frissell was engaged by the district as Assistant Engineer.

I was so well acquainted with the character of the basin, that the detail survey disclosed to me but little information. It simply confirmed my knowledge. I needed the support of engineers with more experience and the board engaged Mr. Isham Randolph of Chicago, who was in charge of the Sanitary Canal and who had been associated on the Panama Canal. He was recommended by Mr. Blazer, representing the interests of William Deering who had bought about sixty thousand acres of land in Pemiscot and Dunklin counties, part of which lay within The Little

River Drainage District. I also secured Mr. Arthur E. Morgan, who was formerly assistant to Mr. C. G. Elliott in the Drainage Experiment Office in Washington, and had made many surveys and studies of land reclamation including a special study of the St. Francis Basin in Arkansas, which is similar to the Little River Basin, and had prepared a plan for its drainage. He was afterwards in charge of the Miami Conservation District at Dayton, Ohio, and is now doing valuable and original work as President of Antioch College in Ohio. Mr. Phillip N. Moore of St. Louis, recoginzed as a specialist in difficult engineering problems, was suggested by parties interested in this development and was also engaged.

The reclamation of this valley, which required construction of main channels sufficient for outlet of the smaller ditches, also embraced the problem of providing for relief from headwater overflow. The survey indicated that the discharge of the small streams which bring down the runoff from the Ozark foothills might be diverted eastward along the foot of the hills to the Mississippi River at Cape Girardeau, a distance of twenty-nine miles. Fortunately the valleys of these Ozark streams are higher than the bank of the Mississippi. Castor River, the most remote, is highest and a diverting waterway could be designed with a reasonable slope toward the river. This seemed a simple method of protecting the valley from these serious headwater floods. It was decided to construct

such a diversion floodway by placing dams in the streams and building a strong levee on the flat land in front of the bluffs, extending it to the river. This would develop ample basins for regulating the quick floods and provide a "low water" channel. There seemed to be no serious difficulty, but Mr. Moore doubted the safety of this plan for handling the headwaters.

He pointed out that the quick floods from the clay and rocky hills of the Ozark Ridge were likely to endanger the levee and referred us to recorded instances of disaster by similar floods. We had the assurance that the floods of all of these streams could not possibly reach and occupy the floodway east of White Water River together. His criticism, however, gave us caution to provide for possible emergency with ample margin for safety. Mr. Moore was the older man of the board, his great caution would not permit him to endorse the floodway and he filed his objection and retired from consultation and responsibility.

The Mississippi River Commission had constructed a levee across the lowland between the foothills of the Ozarks at Cape Girardeau and the Benton Hills, a distance of about three miles, to protect the Little River Valley from overflow by the Mississippi River. This levee was built after the Little River Drainage District was organized, but before there was a formulated plan for drainage. The War Department granted permission to open this levee for the

purpose of constructing the diversion floodway. We decided to build that part of the floodway levee along which the overflow water of the Mississippi would extend five feet higher than the government levee and to build up the government levee to our elevation. The experience of fifteen years has proven the floodway to be ample for its requirements and the levee has served, except for a small break due to faulty work which occurred a few months after construction. The flood of 1927 which was two feet lower than the highest flood known--that of 1844--rose to within seven feet of the top of our levee and disclosed no evidence of weakness or inadequacy in it.

Mr. Moore's disapproval of our plan to carry the quick flood from the Ozark streams by a diversion floodway had probably been made known to the engineer who checked the plan when we placed a second issue of bonds on the St. Louis market, and who advised construction of a concrete spillway in the levee. The pyramids may have some real value but its evidence is not less apparent than the merit of this concrete spillway, fronting four hundred thousand acres of level farms which are taxed $50,000.00 for its construction. It is not needed as a protection against hill floods and is not designed to serve against a Mississippi River flood. I was once advised to engage a competent lawyer, accept his advice, and then attend to the business myself. So with consulting engineers--they do not work out the problem. They study your plan or conception, check it, suggest correction or

caution, and leave the decision to you. In reclamation ventures, engineering plans must be adjusted to economy, but even with unlimited resources the effort to correct nature's method may prove chimerical.

A charted estimate of runoff for the Drainage District was prepared by Mr. C. G. Elliott of Peoria, Illinois, who was in charge of drainage experiments of the U. S. Department of Agriculture for many years, and who is a recognized authority on land drainage and author of several books on the subject. He is noted as the engineer who suggested relief from alkali in irrigated sections of the western states by a system of tiling which would under-drain the land and carry the alkali off instead of depositing it on the surface.

Mr. Elliott's runoff chart indicated that the total accumulation of drainage runoff would require a channel two hundred fifty feet wide and twelve feet deep. As the cost of such a channel would exceed our means we planned a floodway for the lower portion of the valley since the low value of swampland offered a cheap right-of-way, and provided that where lateral ditches entered the floodway they should extend to a point low enough that backwater from the floodway would not interfere with the drainage service of the ditch. This was not altogether satisfactory and the plan provided that the floodway might be supplied later with a service channel.

The detailed drainage was planned with

ditches varying from twenty to thirty feet in width and generally eight feet deep, located parallel to each other and, as nearly as practicable, one mile apart, which gave a large outlet ditch for farm drainage along one side of each quarter-section.

The assessment of benefits and damages was made by a commission appointed by the Board of Supervisors and composed of W. C. Cracraft of Cape Girardeau County, James Reed of Stoddard County, and Luther Conrad of Dunklin County. This commission estimated that the benefit would amount to $40.00 per acre on the best lands receiving the greatest degree of benefit and less on other lands according to their condition, fertility, and degree of drainage service, which amounted to a total benefit estimate of $13,000,000.00.

The law under which we were operating required that the plan for drainage and the estimate of benefits and damages should be submitted to the Circuit Court for approval and that objections by individual interests should be duly heard and determined.

The most strenuous objection was made by Mr. Louis Houck of Cape Girardeau who had acquired several large tracts of swampland, part of which lay within this drainage district. He had always approved draining the wet lands of Southeast Missouri, but was not in sympathy with this enterprise. He was a resourceful man of strong personality, but had no talent for cooperation and had very few associates. He was convinced of

the great resources of Southeast Missouri and was promoting their development by building railroads with the support of others who needed the service of the roads. He was not always able to obtain all he expected, but he got the roads built through promoting opportunities for other enterprises. His first venture was a line from the Iron Mountain Railroad at Delta to the City of Cape Girardeau which was supported by a bond issue by Cape Girardeau County(!) He was able to extend this road westward into the Ozark foothills to reach the oak timber suitable for railroad ties. He was locally aided in building a line from Cape Girardeau to Morley and, with the support of the Himmelberger - Luce Land and Lumber Company, extended this line to Morehouse and later to Pascola in Pemiscot County. He constructed a branch to Clarkton with the support of the Gideon-Anderson Mill Company at Gideon, and extended it to Campbell on the Cotton Belt Railroad. On his extension from Campbell to Caruthersville, including a short branch to Deering, Mr. J. E. Franklin was associated with him. They were supported by a land grant of about forty thousand acres from Pemiscot County and received some inducement from the Wisconsin Lumber Company for the five mile spur to Deering.

The support of the Himmelberger - Luce Company was given for the purpose of securing a competitive railroad to Morehouse, where it was operating sawmills producing about eight carloads of lumber per day. Mr. Houck expected to handle much of this freight but his ferry fa-

cilities at Cape Girardeau were not dependable for the traffic connection with the Illinois Central Railroad. The lumber company profited by reduced rates on their product, but Mr. Houck was much aggrieved by the small benefit received by him. The opposition of Mr. Houck to the drainage venture, which was largely directed by Mr. Himmelberger, may have been due in part to the strained business relationship between them.

These railroad lines promoted general development besides serving the interests which supported their building. The towns of Parma, Gideon, Bragg City, Pascola, and Deering were built to serve the enterprises thus made possible, and Malden, Kennett, Hayti, and Caruthersville were greatly benefited. Facilities for marketing forest products brought needed wealth which remained to be invested in land and ditches, levees, and farms. The cottonwood timber of Pemiscot County now attracted manufacturers who demonstrated its superior fitness for some uses which permitted it to take the place of other woods. A levee was needed along the Mississippi River front for the entire length of the county. Increasing business activity indirectly promoted the levee which was originally built by local effort and capital.

Mr. Houck's resources were limited and his locations were difficult. Engineering science declares that no line can be drawn absolutely straight, but his engineer, James Brooks, could make them seem so, which was sufficient for

Mr. Houck's purpose. A six-degree curve on the map might be a nine degree curve around the obstacle, and as with Mercutio, "t'would serve." Where foundations were bad and earth grading was impossible, long logs were laid in the soft soil, lengthwise to the line of the track, and crossties were spiked on them. Where the cost of bridges was beyond his immediate resources, the overflow in the wide swamp was permitted to pass over the track. We consulted schedules of train service only for time of leaving terminal point. Mr. Houck did not much encourage us with vain promises of early improvement, which course allayed useless complaining and we agreed that it was still better than walking, at the price. This account should somewhat explain why he had no partners in his railroad building.

The general business enterprise of the swamp area promoted by this railroad building also supported the reclamation effort during the years of construction of the levees and ditches. The Little River Drainage District was able to state in its bond prospectus that there was not an acre of land within the district which was more than six miles from a railroad. Mr. Houck gradually brought his railroads into serviceable condition. As a result of the drainage much land was prepared for farming, roads were built, and development was apparent in all sections. His vision of the future was realized and he was able to sell his entire railroad holdings to a main

line road between St. Louis and Memphis at a price which more than justified the venture, labor, and difficulties of the years of effort.

Human nature is about the same in all of us and one characteristic of the gambler seems to assert itself with successful ventures. It has been demonstrated that the gambler must win if he can always double his bet as the turn of the card must eventually fall in his favor. Many fortunes were acquired in the Southeast Missouri development but very few of us were disposed to cease betting and retire from the game. Mr. Houck "took the pitcher to the well" once too often. His Cape Girardeau Northern Railroad proved a losing venture. His railroad building was not generally considered good business, but he carried on with persistence and unflagging confidence in his vision of the future of this section and his own ability to win out. Payday frequently waited upon recuperation of a depleted bank balance, but none of his employees waited so long as he for his compensation. He frankly made himself a public character and only in that regard do I speak of him. His resourcefulness was shown on one occasion when the Cotton Belt Railroad Company saw fit to enforce the terms of an agreement by means of a receivership for one of his railroads. The receivership was established and an attorney at Kennett was made receiver. He duly appeared at Mr. Houck's office and demanded that the property be formally delivered into his hands.

Mr. Houck introduced him to the auditor in charge of the records and instructed the auditor as follows: "You will deliver all papers pertaining to the operation of this railroad to this receiver, first making careful and accurate copies thereof to be retained in this office." There may have been no "contempt of court" in this act, but it certainly was effective as an evasion of court orders.

It seemed to me that Mr. Houck never was quite willing to subject his own swampland to the heavy tax for reclamation cost, and resisted organization for drainage wherever his holdings were embraced. One instance of his opposition was notable. He owned forty-two hundred acres in Stoddard County which was early included in a district where he resisted the organization, the issuance of bonds, and later the collection of the taxes. He offered to sell cheap, without success. Values developed while he resisted and he realized an advance of more than $50,000.00 in defiance of his strenuous opposition.

chapter ten

THE WAR PERIOD

I followed up the dredging contracting with uniform success and a moderate profit which was constantly invested in more machinery to equip for more work, until I owned seven large dredges.

Dredging machinery was gradually developed by suggestions and experience of contractors together with the engineering facilities of the manufacturers. This evolution resulted in discarding old machines made obsolete because of improvements in the newer machine. The contractor's profit depended upon the efficienty of his machines and the operation of the improved machine would create a saving equal to the ordinary margin of profit. The transfer of a machine from one job to another was expensive and it sometimes happened that we found it worthwhile to buy a new machine for the new contract, which gave us the advantage of having a machine exactly suited for the job instead of adjusting, transferring, and rebuilding an old machine.

On a large contract in Mississippi County, Arkansas, I felt justified in buying two dredges of very large capacity, exactly suited to the job. This enabled me to bid below what my competitor could offer by using old machinery. On this two-year job my new machines earned, above operating expenses, the full purchase price and cost of erection, and a small margin.

There are supposed to be "tricks in all trades" but in the dredging business there was only the question of experience and ability as we all had the same machinery and the same operators. My experience as an engineer and perhaps my talent for mechanics qualified me fairly well for this business, but I was unwilling to live on the job, which reduced my competitive advantage. I had observed that the measurement of the excavated pit from which the material was procured, always exceeded the quantity estimated for a levee. This difference amounted to more than twenty-five per cent and was due to wastage beyond the exact prism lines of the levee. Other contractors were not familiar with this fact. I secured the two most profitable jobs which I handled because of this knowledge and it is strange to relate that my competitors did not seem to grasp this fact.

The St. Louis Globe-Democrat of August 5, 1914, carried a full-page headline announcing the declaration of war by Germany against France. I was fifty-nine years old. During my adult life I had not experienced war in any intimate manner. I had never been called upon

for a service to my country which demanded a risk or sacrifice. This announcement of the war which would engage two highly civilized nations and threatened unbelievable loss and distress, as must surely follow the preparation of Germany, so impressed me that I was wholly absorbed for the space of an hour or more in contemplation of the tragic threat before I proceeded to read the detailed account. Forty-three years had passed since the Franco-Prussian War during the Bismarck regime, when Prussia so rudely gripped France and robbed her of an enormous tribute, and inspired a spirit of antagonism which disturbed both nations and still remained to spur them to their utmost effort in this succeeding struggle. I had no concern for ourselves regarding this war. I knew it would disturb our business, but we had no part in the quarrel. There had been no great war with its lesson of hardship and peril to impress the last two generations of the nations directly or remotely to be affected by this war and the men eligible to serve were ready and eager for the exciting experience. I knew that these nations were abundantly supplied with material resources and the declaration of war was quite as alarming as fire bells during the quiet peaceful night.

America was quickly awakened with varying sentiments regarding the war. We had a number of immigrants from those countries who retained tender memories of their homelands. The Germans retained that love of the

Fatherland more than others perhaps. This was soon noticed and in my home town we distinctly felt the withdrawing of friendly relations and especially noticed the halting loyalty to the American flag when it became apparent that we would be drawn into the war, that America would have to conserve food to support the warring nations, and that we must later raise money by the sale of Liberty bonds. This reluctance of a great portion of the Germans to render aid to the ancient enemy of their home country was difficult for them to overcome.

It was inevitable that acts of war between these nations with whom we had our most intimate commercial and social relations should bring about a situation wherein we must take some part. The desperate struggle had passed into its third year before our nation realized that we must furnish men as well as material resources. America gradually developed a very stern feeling against the German invasion of Belgium and France as being a cruel, self-aggrandizing, and unnecessary act and this no doubt enabled President Wilson to carry over the universal draft, perhaps the more remarkable because of our feeling of security and self-sufficiency as a nation. But our young men were so far removed from our Civil War experience and the older men so clearly understood the situation that the draft was in some degree a popular movement which resistlessly carried unwilling men into it.

I had two eligible sons, both engaged in en-

terprises closely or actively related to production of food. The elder was included in the first five per cent draft. He had been successful in developing and operating farms in a rich section of Southeast Missouri. I have before me his statement of production in the crop season of 1915:

1130 acres of corn yielding 71,050 bushels
300 acres of wheat producing 6,100 bu.
215 acres of oats, 8,000 bushels
100 head of marketable hogs

I directed the harvest and sale of his crop for the year of the draft. It amounted to a little over 80,000 bushels of corn; 8,000 bushels of wheat; and a proportionate quantity of oats and hogs. His friends insisted that he should be retained on the farms because of his vocation and requested him to make application accordingly, which he refused to do.

He reported to Camp Funston in charge of the first draft contingent from Dunklin County. I had insisted that he should not volunteer, but did not feel disposed to object when he was drafted. A little later I was inclined to support a movement for his return to the farms and visited the exempting officer, with the intention of urging his release. I sat in the office two or three hours observing the business of preparation for war, talking with the exemption officer when he was not otherwise engaged. During those hours I became so completely and wholly absorbed with the work and impressed with the

obligation of every citizen, that I came away without having mentioned the purpose of my visit.

During the year of our preparation for training men, especially in the aviation service, I received a telephone call from Mr. Boyd in St. Louis who had charge of preparation of a training field near Belleville, Illinois. It had been decided to underdrain that level field and this made it necessary to construct an outlet for the drainage, which should be excavated with a dredge. Mr. Boyd asked me to undertake this work. I had no machine available and told him so. His answer was that if I found later that I could do the work, he wished to hear from me. It occurred to me that by placing my other son in service of this kind he probably would not be required to go to the front and the next day I called Mr. Boyd to say that I thought I could undertake the job. I went to St. Louis and investigated the work, associating with different men who were in charge, and became so much impressed by the effort and enthusiasm that I returned to Mr. Boyd's office with the resolution to forget my own purpose and give my best effort to aid in his work. Accordingly I told him I could not be ready within the required time and recommended another party who had a machine within a few miles of his work which was immediately available. I remained in St. Louis two or three days aiding him in pressing this machine and its unwilling owner into immediate service. He never knew the real purpose of my

trip to St. Louis.

I finally lost all of my profits as a contractor and much more because of three or four principal reasons. In one instance it was due to the incompetency and dishonesty of the commissioners and engineer of the district for which I was working; besides the fact that I was more interested in our support of the World War than I was in the business proposition which a partner led me into. The discard of steam power made necessary by the development of the internal combustion engine resulted in such great modification of excavating machinery that six expensive and excellent dredges became obsolete, creating an actual loss of more than $100,000.00.

One very expensive machine was destroyed by fire when the difficult job on which it was operating and for which it was exactly suited was about two-thirds finished. I operated one full year at a heavy loss every month to finish this job with an unsatisfactory machine. The World War caused a rise in wages and cost of materials and supplies. In one instance I complained to the factory regarding a bill of $105.35 for a plain shaft forty inches long, four and a quarter inches in diameter, and weighing three hundred pounds. The factory explained that it was operating under army control and that their record showed that the time consumed, including interruptions, in finishing the shaft, removing it from the lathe to accommodate war work,

and replacing it when the lathe was free, increased the shop cost more than four hundred per cent.

The boom of land values promoted the indiscreet organization of drainage districts in which the cost made it difficult to sell bonds. The failure to sell bonds of one drainage district made it necessary for me to borrow money to carry on my business and I paid as high as twenty per cent per annum for a short time.

To obtain a $10,000.00 loan in June 1921 I applied to a strong bank with a letter from a member of its board. The money was refused with the explanation that loans were confined to regular patrons and stockholders. I borrowed from one of these, paying eight per cent interest in advance and ten per cent permium, depositing as security double the amount of the loan in drainage district ninety-day notes covering approved estimates of work performed. That year this bank borrowed many millions of money from the Federal Reserve Bank at five and one-half per cent. I like to believe that "whatever is, is right" and I presume the rate was justified by the risk. My note was paid promptly.

chapter eleven

THE SWAMPS ARE DRAINED

In the Little River Drainage District the cost must be greater per acre than for the earlier organized districts because of the added burden of providing for relief from the Ozark hills runoff, as well as the accumulated runoff from the already constructed ditches within the valley. To this tax must be added the cost of improvements necessary for bringing the land into cultivation and the total expense might easily become more than farm value would warrant.

The commissioner's estimate of benefits was made as nearly fair as possible. The work was so extensive, with so many varying degrees of benefit, that necessarily there would be some errors. The objections were adjusted and confirmation by the court, which carried the authority to progress with the work, was finally obtained. The board decided to sell bonds in amount of $4,750,000.00 to cover the cost. There was difficulty in finding purchasers for this large issue. There had been some defaults

on bonds issued for irrigation work in the mountain states, but this did not embarrass sale of drainage bonds except insofar as it called attention to the peculiar character of benefit assessments as a basis for bond issues. The World War disturbed investments and turned attention of investors to securities which would be least affected by this disturbance of business. It is probable that this fact was helpful in the sale of bonds which was accomplished within a few months at a reasonable discount.

During the period between the adoption of the original plan for drainage and the date of sale of contracts, the engineers then in charge of the drainage district determined to build a main ditch instead of the floodway originally planned for the lower portion of the valley. This ditch was specified to be about one hundred and thirty-five feet wide and ten feet deep, instead of the dimensions suggested by Mr. Elliott. The extra cost of this channel together with other unforeseen expenses made it necessary to sell $1,600,000.00 additional bonds. Construction began in 1914 and was finished within about two years. The reclamation project was extensively advertised and land values rapidly increased from about $10.00 per acre to $30.00 per acre. The timber had been cut from most of the land and clearing farms began at once, except where valuable timber was held for future cutting.

At the annual landowner's meeting in Octo-

ber 1924 the decision was made to reconstruct the main ditch or otherwise provide additional service and also to reform a few laterals. It was necessary to issue more bonds to cover this cost. I attended that meeting and voted for the additional work and its necessary bond issue, believing the cost would not exceed two million dollars. The plan determined upon was much more extensive than I thought it would be and required a bond issue of four million dollars. The maturities for the new bonds for reconstruction were dated to begin after payment of the other issues, thus only slightly increasing the annual payments, but extending final payment to 1944 or later. The district sold part of these bonds, reserving one million for future sale as the work progressed. It was impossible to sell the remainder and the necessary work planned for the upper section of the ditch was not done. More than fifty percent of the district was under cultivation within a period of twelve years, when the general depression of agriculture began to affect the progress and development slowed down.

The swampland was generally not boggy, as was indicated by the heavy forest trees standing erect, but it was "waterlogged" and several years of air and sunshine and vegetable growth were needed to bring it into best arable condition after removal of flood and forest. The farm development was slower and therefore more expensive than we enthusiasts anticipated. Per-

haps the elderly real estate dealer in Minnesota was about right when he expressed the opinion that "farm land should be developed for use before being offered to farmers." Just as a wagon or house must be completed before being sold to the user.

The cost of clearing, fencing, and building necessary for making the farm amounted to about $25.00 per acre, which was generally borrowed from loan companies at six to eight per cent. Thus the annual charge per acre, for the twenty years period until maturity for all the bonds is as follows:

Drainage bonds and interest	$2.67
Ditch maintenance & incidentals	.16
State, county, and school taxes (?)	.60
Interest on development loan	1.75

This exceeds the usual rental income on any but exceptionally fertile land in good crop seasons. The return to "normalcy" in agriculture as well as in other lines of business, showed that this regularly recurring charge on farm land is too heavy. It leaves no reserve to cover maintenance and the ordinary vicissitudes of life, and maintain a car for both the landlord and the tenant.

Mr. Erickson bought three hundred acres of excellent cutover land, desirably located and well served by main ditches for which he paid a price representing, above the value of the land, three or four profits to traders before the "dirt

RETURN TRIP ON DITCH NO. 1

Dredge with four and a half yard dipper and ninety foot boom, equipped with two boilers, constructing Ditch No. 1 of the Little River Drainage District.

farmer" signed to pay. His boys stayed with him for awhile to help him make the fine farm home. Interest and taxes were met for several years. Reverses came, Faith and Hope fled. The climax was reached when Mrs. Erickson had an accident while operating her Ford and a suit for damages was threatened. The old couple quietly disposed of all personal property, purchased through tickets by rail and steamer to the old home in Sweden and abandoned the mortgaged farm to their creditors.

A caption for farm mortgage forms might well be: "This is hell. All hope abandon, ye who enter here."

Drainage taxes were paid with little default until the year 1926, after which the delinquency increased with each year until 1930 when it amounted to more than sixty per cent.

Under the distressing conditions of business, especially the depressed market for farm products and the consequent depression of farm values and incomes, the default in payment of interest and maturities of bonds of the district occurred for the September payment in 1929.

After default the market value of the bonds fell to about thirty-six per cent of par. The agricultural depression continued and the bonds in 1931 were not saleable above twenty-five per cent of par, although actual value was probably fifty per cent. A Bond Holders Protective Committee was arranged in 1930 to consider the

CHEWING ITS WAY THROUGH THE SWAMP

Cutting eight miles of ditch in Drainage District 9, Craighead County, Arkansas in 1917. This ditch had a bottom forty feet wide and was eight feet deep. Picture shows the difficulties encountered digging through timbered land.

situation and determine if some policy might be adopted to protect their interests. At this time the engineering department prepared a map based on a cursory survey which showed that two hundred thousand acres of the land covered by the first bond issue were not paying taxes. This included about eighty thousand acres of cleared land on which annual installments with interest and maintenance assessments are $2.83 per acre, thirty thousand acres of cleared land on which the charge averages $1.50 per acre, and ninety thousand acres of cutover timberland also charged $2.83 per acre. Under the bond lien the situation is reduced to the discouraging prospect of the annual recurrence of these charges which will relentlessly take all of the earnings for fifteen or more years without respite.

Evidently values have vanished. The owner suffers first loss. The loan companies have an equity value remaining as some of the individual forty acre tracts have been developed to be worth more than the lien for the unpaid principal of the bonds as assessed against each particular tract. The full charges cannot be recovered from the partially developed tracts of the undeveloped lands.

There is no legal method of releasing or modifying the recorded bond lien, but the bondholders could buy the land at county tax sales, then sell for value and make a deed with warranty against the bonds. This would clear away

LAND-CLEARING SKIDDER 1908

Clearing land with Clyde steam-powered skidder after ditches were dug. Much valuable timber was stacked and burned in clearing the land for farming.

every charge or lien and put the land back in line to pay general taxes and the ditch maintenance tax. It would give the bondholders all there is of present real value in this good land and would free the communities of a distressing condition.

Nearly all of the development of these good, level bottom lands was financed with capital borrowed by the landlords who are disappointed that the customary sharecrop rental "one-third of the corn and one-fourth of the cotton" does not return an income sufficient to pay the taxes for state, county, and school, installments and interest on drainage bonds, maintenance of ditches and interest on loans for development, and also maintain his family in town. His school textbook did not contain Ben Franklin's couplet:

> "He who by the plow would thrive
> Himself must either hold or drive."

The ditches and levees are constructed. The railroads and highways are built. We have the towns, grain warehouses, and cotton gins. Farms are cleared and supplied with buildings.

The normal yield on medium quality soil is thirty-six bushels of corn or one thousand pounds of cotton per acre, and many farms exceed this.

Whatever policy the bondholders may follow, the farmers, owners, or tenants will continue to produce crops. They will reserve two-

thirds of the corn and three-fourths of the cotton as compensation. This will be sold to dealers; supplies will be bought from the merchants; service will be rendered by doctors, lawyers, schoolteachers, and public officials; and community life and business will go on as usual.

POSTSCRIPT 1957

Life and business did go on as usual. The depression years were lean and hard.

Otto Kochtitzky died in 1935, before the economic tide began to turn.

Some of these good lands are now selling for more than $200.00 an acre.

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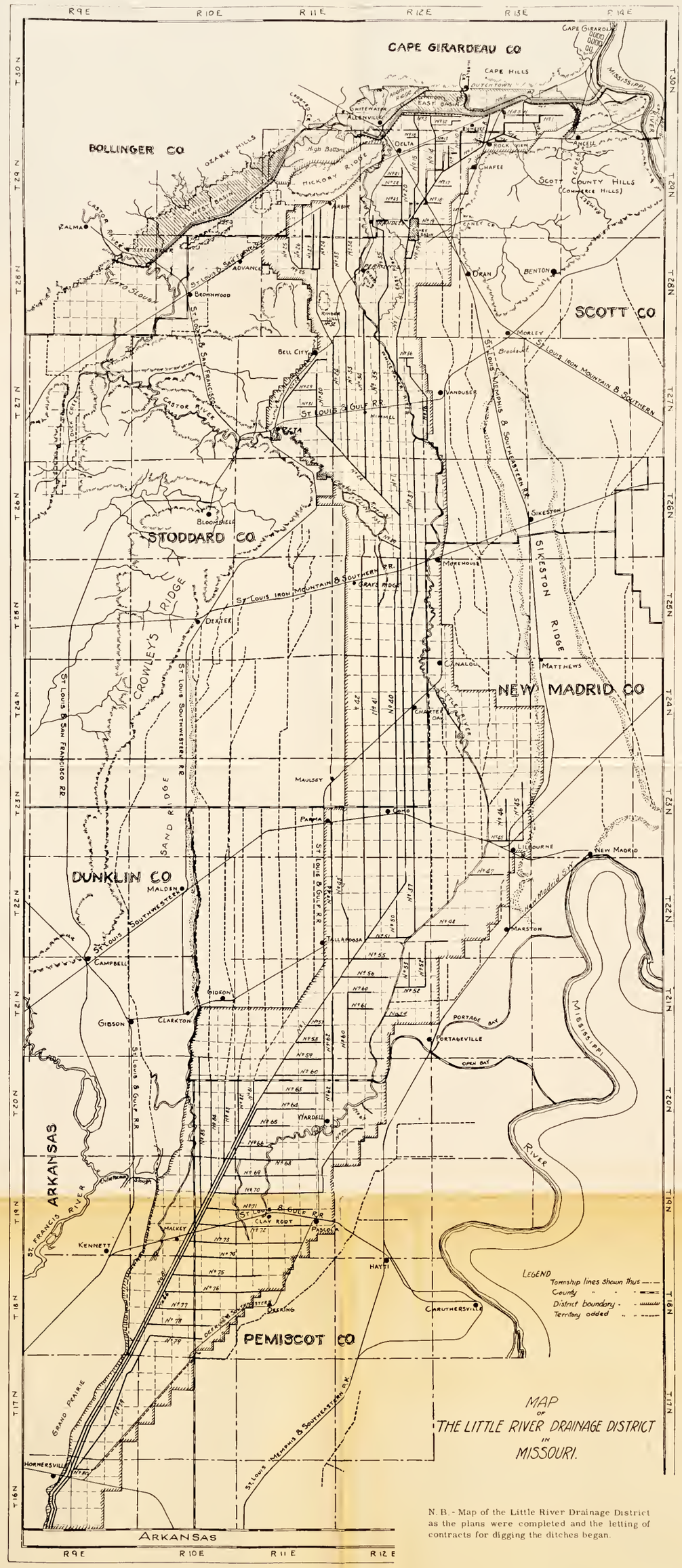
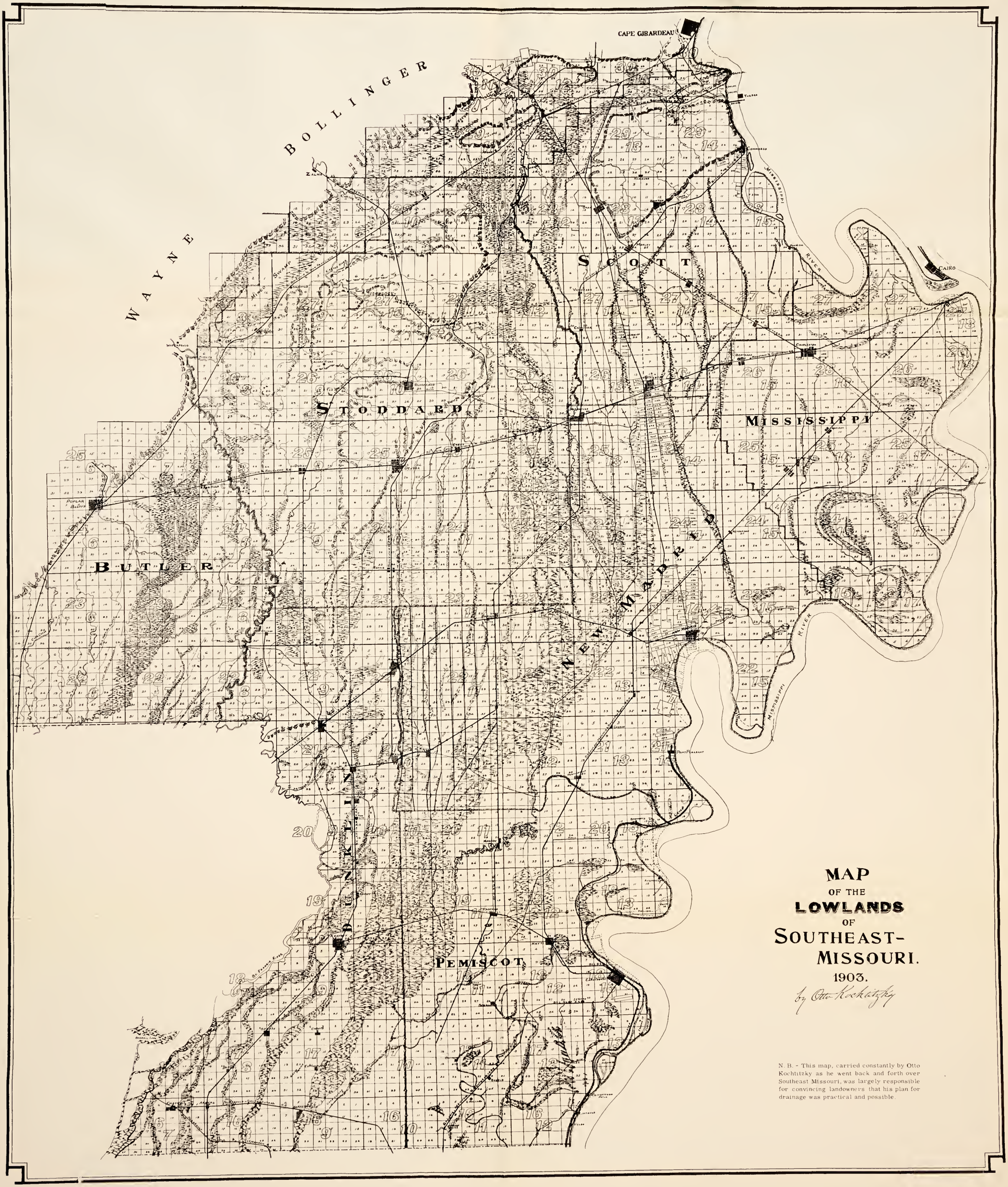


MAP
OF
THE LITTLE RIVER DRAINAGE DISTRICT
IN
MISSOURI.

N. B. - Map of the Little River Drainage District as the plans were completed and the letting of contracts for digging the ditches began.


CAPE GIRARDEAU
BOLLINGER
WAYNE
SCOTT
STODDARD
MISSISSIPPI
BUTLER
NEW MADRID
DUNKLIN
PEMISCOT
CAIRO
MISSISSIPPI RIVER
MAP
OF THE
LOWLANDS
OF
SOUTHEAST-
MISSOURI.
1903.
by Otto Kochtitzky
N. B. - This map, carried constantly by Otto Kochtitzky as he went back and forth over Southeast Missouri, was largely responsible for convincing landowners that his plan for drainage was practical and possible.